Improvement Capacity In Mississippi Schools: A Comparison Between High Needs Improving And Struggling Schools

Paula W. Tharp

University of Mississippi

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IMPROVEMENT CAPACITY IN MISSISSIPPI SCHOOLS:
A COMPARISON BETWEEN HIGH NEEDS IMPROVING AND STRUGGLING SCHOOLS

A Dissertation
presented in partial fulfillment of requirements
for the degree of Doctor of Philosophy
in the Department of Leadership and Counselor Education
The University of Mississippi

by

PAULA W. THARP

December 2017
ABSTRACT

Despite evidence provided through decades of educational research regarding effective practices in high-performing, high-poverty schools, Mississippi continues to trail other states in improving student achievement outcomes (Annie E. Casey Foundation, 2016). Educational research provides evidence regarding the importance of school leadership, the specific practices school leaders engage in to bring about sustainable improvement, and school leadership preparation and support to improve struggling schools (Elmore et al., 2014; Manna, 2015; Fullan et al., 2006; The Wallace Foundation, 2010). Research also acknowledges leadership to improve failing schools adds complexity and requires a particular set of leadership knowledge and behaviors (Elmore, 2008b; Marzano et al., 2005; Muhammad, 2009; Reeves, 2009).

In order to consider solutions to high-poverty struggling school concerns in Mississippi, the quantitative research study was designed to compare the capacity for improvement in high-needs improving and high-needs struggling Mississippi schools. Net gain or loss of Quality of Distribution Index (QDI) scores and School Performance Level (SPL) points over five years of school performance data determined schools’ research designations of improving or struggling. Matched school pairs included one improving and one struggling school matched on baseline QDI score, size of school, and school poverty level. A total of 19 schools participated in the research study – 12 improving and seven struggling. Of the 19 schools, 14 were matched with a comparable school for a total of seven for matched-pairs testing.
The focus of the research was measurement and comparison of internal coherence (IC) defined as “…a school’s capacity to engage in deliberate improvements in instructional practice and student learning across classrooms, over time…” (Elmore, Forman, Stosich, & Bocala, 2014). Participating staff and principals completed the Internal Coherence Survey (Elmore & Forman, 2012). Resulting scores were tested in ten hypotheses using paired- and independent-samples t-tests, Pearson’s correlations, and Kendall’s tau-b. The primary hypothesis considered the difference in IC in high-needs improving and struggling schools. A paired-samples t-test indicated a statistically significant difference in the capacity for improvement in the two school types. Statistical testing for eight supporting hypotheses confirmed, either through statistically significant results or non-statistically significant results, the viability of internal coherence is a factor to consider in additional research and as a focus for an improvement strategy for high-poverty schools in Mississippi.
DEDICATION

John Tharp
My husband, my support, and my source of courage

Hillary Tharp
My daughter and my inspiration for attempting big things

My Little Loves
For cheering on GiGi in her “big homework”

Rosemary Wilbanks
My mother and my model for facing challenges head on
ACKNOWLEDGEMENTS

Accomplishing this monumental task would not have been possible without the guidance and support of my greatest encourager, my husband. You have always challenged me to think beyond what I think I am capable of, and for that, I thank you. Thank you to my daughter and my precious grand girls for your patience when I missed family gatherings and special times we could have had together because I was working on my “big homework.” You supported me and encouraged me to continue trudging through. Thank you to my friends in my cohort who spent many hours with me working on our projects throughout our journey and for your continued encouragement to stay the course and see it through. Also, I thank God for placing me on a path of work that is worth doing and opening and closing doors that led me in the direction of serving the underserved.

Thank you to my dissertation committee chair, Dr. Dennis Bunch, for your continual challenges to set higher standards and give the best. Thank you to my dissertation committee members, Dr. Doug Davis, Dr. RoSusan Bartee, and Dr. Marie Barnard – your words of encouragement, your challenging questions, and your willingness to help me work through my questions is so appreciated.

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CHAPTER I
INTRODUCTION

Educational improvement literature reveals evidence-based practices in instruction and school leadership positively associated with student achievement improvement in schools (Elmore, 2008a; Elmore, 2008b; Fullan, Hill, & Crevola, 2006; Hattie, 2015a; Kouzes & Posner, 2012; Lezotte & Snyder, 2011; Marzano, Waters, & McNulty, 2005). In addition, a growing body of literature and research focuses on the importance of school leadership in shaping the conditions within schools for improvement (Marzano et al., 2005; Manna, 2015; Reeves, 2011; Doyle & Locke, 2014). Despite a wealth of information regarding evidence-based practices for instruction, leadership, and improving schools, Mississippi continues to rank at or near the bottom of states across the United States on student achievement measures (Annie E. Casey Foundation, 2016). Compounding the school failure concern, according to the National Center for Educational Statistics (NCES) (2016), Mississippi’s percentage of school-age students in poverty was the highest in the nation in 2014, some 29 percent. Based on the evidence, the research study was designed to consider the capacity for improvement in Mississippi high-poverty schools in an attempt to add to the literature informing policy, practice, training, and support of school leadership and impact the trajectory of school improvement in the state.

The Mississippi Department of Education (MDE) (2014b) reports 32 percent of schools, 284 of 878, with scores of D or F during the 2011-2012 school year (SY). In the 2012-2013 SY, 26 percent of all schools, 236 of 889, scored of D or F. In the 2013-2014 SY, 163 of 894, 19
percent of schools, scored D or F. The total of D and F schools for the 2013-2014 SY was following the application of a waiver granted to Mississippi by the U.S. Department of Education allowing schools to retain the rating from the 2012-2013 SY if the rating was higher (MDE, n.d., p.9). The 2013-2014 SY was also the first year a revised accountability system was implemented focusing on a student growth calculation using an increase in proficiency levels. The revised calculation method replaced a prediction equation which was the basis of the waiver (MDE, n.d., p. 8). The number of schools receiving a score of D or F was 368 without the waiver, or 41 percent of 894 schools (MDE, n.d.).

The state assessments for accountability in Mississippi shifted to the Partnership for Assessment of Readiness for College and Career (PARCC) assessment in the 2014-2015 SY (MDE, n.d.). Important to note is the application of a second waiver from the U.S. Department of Education in the 2014-2015 SY due to the change in state assessment allowing schools to keep their accountability score from the 2013-2014 SY if the score was higher (MDE, n.d., p.17). Student performance in the 2014-2015 SY resulted in 130 of 889 schools, some 15 percent, with accountability scores of D or F after the waiver application. Without applying the waiver, 345, or 39 percent of schools would have been labeled as D or F (MDE, n.d.).

The state assessment shifted again in the 2015-2016 SY to the Mississippi Academic Assessment Program (MAAP) with no opportunity for a waiver (MDE, n.d.) resulting in 332, 38 percent of the total 882 schools, labeled as D or F, the highest official number since the 2011-2012 SY. Table 1 illustrates the number of Mississippi schools with accountability scores of D and F from the 2011-2012 SY to the 2015-2016 SY.
Table 1

_D and F School Distributions: 2011-2012 SY to 2015-2016 SY_

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<tr>
<td></td>
<td>MCT2</td>
<td>MCT2</td>
<td>MCT2</td>
<td>MCT2</td>
<td>PARCC</td>
<td>PARCC</td>
<td>MAP</td>
</tr>
<tr>
<td>Total D and F Schools</td>
<td>284</td>
<td>236</td>
<td>163</td>
<td>368</td>
<td>130</td>
<td>345</td>
<td>332</td>
</tr>
<tr>
<td>Total Schools</td>
<td>878</td>
<td>889</td>
<td>894</td>
<td>894</td>
<td>889</td>
<td>889</td>
<td>882</td>
</tr>
<tr>
<td>Percent of Total</td>
<td>32%</td>
<td>26%</td>
<td>19%</td>
<td>41%</td>
<td>15%</td>
<td>39%</td>
<td>38%</td>
</tr>
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</table>

Note: The 2013-2014 SY initiated the revised accountability system utilizing growth calculations to determine increase in proficiency level rather than growth predictions (MDE, n.d.). The state assessment was revised in 2014-2015 SY for the Mississippi College- and Career-Ready Standards. Waivers were applied each year respectively allowing schools to retain the rating from the previous SY if the rating was higher (MDE, n.d.). The state assessment was revised again for the 2015-2016 SY with no waiver opportunity.

The challenge of historically low student performance in Mississippi high-poverty schools and evidence regarding the importance of school leadership in setting direction for improvement provide a rich opportunity for research focused on what school leaders in high-poverty improving Mississippi schools do differently than leaders in high-poverty failing or struggling schools; therefore, the purpose of the study was to look inside high-poverty schools in Mississippi comparing the capacity for continual improvement in Mississippi high-needs improving (MHN-I) elementary schools to the capacity for continual improvement in Mississippi high-needs struggling (MHN-S) elementary schools to determine if a significant difference exists in the two types of schools. Levels of instructional or internal coherence (IC) were assessed to
determine the capacity for continual improvement.

Focus of the Study

Principals leading high-poverty, low-performing schools are tasked with recognizing and implementing strategies most effective in achieving sustainable high performance. Fullan and Quinn (2016) as well as Elmore, Forman, Stosich, and Bocala (2014) contend IC is a factor present in schools achieving sustained improvement. Coherence is “…a shared depth of understanding about the purpose and nature of the work” (Fullan & Quinn, 2016, p. 1). Elmore et al. (2014) define IC as “…a school’s capacity to engage in deliberate improvements in instructional practice and student learning across classrooms, over time…” (p. 3). The authors explain coherence is achieved through a cycle of working together, assessing impact, refining strategies, and making adjustments as data are gathered and analyzed.

Elmore et al. (2014) contend levels of IC present in schools determine a school’s capacity for improvement; therefore, the purpose of the study was to measure and compare the levels of IC present in high-poverty, also referred to as high-needs Mississippi schools. To narrow the focus of the research and work with a manageable number of schools, the research is centered on elementary schools.

One intent of the research was to identify the usefulness of “coherence making” (Fullan & Quinn, 2016) as a strategy for improvement. Fullan and Quinn (2016) characterize coherence making as the process of working collaboratively and collectively to build coherence, “…through purposeful action and interaction, working on capacity, clarity, precision of practice, transparency, monitoring of progress, and continuous correction. All of this requires the right mixture of ‘pressure and support’: the press for progress within supporting and focused cultures” (p. 2).
The research further intended to recommend the strategy of coherence making as a guide for leadership training and as informative to school improvement policy. Fullan and Quinn (2016) present a framework for improvement built around development of coherence, or coherence making, as a core practice. Inherent in the framework are “…capacity building, collaboration, pedagogy, and systemness” (p. 5) as key elements in focusing on building coherence as a strategy for improvement.

**Background of the Study**

The background of the research project connects components in the evolution of available research regarding what works in school turnaround. The evolution begins with the knowledge of effective school practices, continues with the importance of leadership practices for school effectiveness, then focuses specifically on challenges in improving schools as well as the leadership practices necessary for improving schools. The background moves to the lack of attention in policy and research to preparation and support of leadership in schools and culminates in discussion of coherence as a framework for improvement providing rationale for research on levels of coherence in Mississippi’s elementary high-needs improving and struggling schools.

Lawrence Lezotte, one of the original researchers whose work launched studies leading to the Effective Schools Movement (Lezotte, n.d.), applied the following well-known statement to the conundrum of school improvement regarding school improvement leadership. “There are those who make it happen, those who let it happen, and those who wonder what happened” (L. Lezotte, personal communication, July 13, 2015). The work of Lezotte and colleagues resulted in documented effective practices associated with high student outcomes in high-poverty, high-minority schools including the importance of effective instructional leadership (Lezotte, n.d.).
Subsequent research continues to generate a growing body of evidence regarding the importance of school leadership, the specific practices school leaders engage in to bring about sustainable improvement, and school leadership preparation and support specific to improving struggling schools (Elmore et al., 2014; Manna, 2015; Fullan et al., 2006; The Wallace Foundation, 2010). School leadership is second only to classroom instruction in addressing low student achievement (Leithwood, Louis, Anderson, & Wahlstrom, 2004; Manna, 2015; Mendels, 2012). In a meta-analysis of school leadership research, Marzano et al. (2005) “…computed the correlation between the leadership behavior of the principal in the school and the average academic achievement of students in the school to be .25” (p. 10). The authors’ research yields a comprehensive set of effective leadership principles with an average measure of effect on student achievement. The researchers found as leadership ability increases, student achievement increases.

In addition to general effective leadership strategies, leadership to improve failing schools adds complexity and requires a particular set of leadership knowledge and behaviors (Elmore, 2008b; Marzano et al., 2005; Muhammad, 2009; Reeves, 2009). Elmore (2008b) contends school leaders are products of the norms and culture of the organizations they lead. He contends, therefore, leaders lack the knowledge and skills necessary to step outside of the norms to achieve improvement in a struggling school in need of a drastically different achievement culture. Manna (2015) also notes the importance of the role of principals in creating the conditions within a school to foster sustainable improvement but points to the imbalance of attention given to school leaders’ training as compared to teachers. As such, Manna suggests a lack of attention from policymakers to the importance of training and support of principals.
National focus and research on leadership preparation and practices necessary to transform schools from chronically failing to high-performing have been elevated following significant focus on and investment in school reform from national and state levels. According to Le Flock, Massell, Stein, and Boyle (2013) in a report published through the American Institutes for Research, the issues with persistently low-performing schools have just come to the “…policy forefront in the past five years” (p. 1). Clear data support the importance of leadership in increasing student achievement (Leithwood & Jantzi, 2008; Waters, Marzano, & McNulty, 2003); however, research is lacking regarding policies, preparation, and support for school leaders in the task of school reform (Darling-Hammond, LaPoint, Meyerson, Orr, & Cohen, 2007; NASSP & NAESP, 2013; Sparks, 2013). Current discourse regarding appropriate and effective performance-based principal evaluation systems also magnifies the need to provide principals charged with school turnaround the systems, policies, procedures, and supports necessary for reform in difficult circumstances. Increased attention to the needs of school leadership is also necessary for taking the efforts to scale for more widespread predictable and consistent improvement outcomes (Chenoweth, 2009; McIver, Kearns, Lyons, & Sussman, 2009; McREL, 2005; New Leaders for New Schools, 2010; The Wallace Foundation, 2010).

The work of educational practitioners and researchers indicates the importance of applying a specific focus or a framework when attempting school improvement – a set of principles or areas of focus on which to base improvement actions and strategies (Elmore, 2008b; Goodwin, Cameron, & Hein, 2015; Kouzes & Posner, 2012; Lezotte & Snyder, 2011; Reeves, 2009). Reeves’ (n.d.) research in high-poverty, high-performing schools reveals the importance of focusing on collaboration. In Reeves’ research, collaboration takes the form of collaboratively scoring student work which perpetuates a common expectation for proficiency
among teachers. Collaboration impacts development of coherence (Fullan & Quinn, 2016). Coherence, according to Fullan and Quinn (2016) is a shared understanding of what is expected and acceptable for effective practice and student proficiency in the work of schools. Elmore et al. (2014) developed a focus or framework for school improvement based on building coherence around instructional and organizational expectations. The authors describe coherence as the capacity of school to achieve a culture of continuous school improvement.

The research focused on levels of coherence in identified high-needs elementary schools in Mississippi to discern the perceptions of teachers and leaders regarding the capacity of the schools for continual improvement and the relationship of coherence to the school’s achievement status.

**Statement of the Problem**

Mississippi ranks lowest or near lowest of all fifty states with regard to student achievement (Education Week Research Center, 2016; Hanushek, Peterson, & Woessmann, 2012; The Nation’s Report Card, n.d.; Mississippi Business Journal, 2014). Achievement concerns are compounded by poverty concerns. According to the authors of “The Condition of Education 2016” (Kena et al., 2016), in 2014, Mississippi had 29 percent of school-age children living in poverty, the highest percentage nationally.

When one considers improvement of high-poverty schools in Mississippi, data on the effectiveness of school improvement efforts in mixed. For example, data presented by Education Week Research Center (2016) confirms Mississippi ranks last in equity compared to other states based on Mississippi’s progress in closing the achievement gap of students in poverty. According to The Annie E. Casey Foundation (2015), the gap between economically disadvantaged students and their peers in fourth- and eighth-grade language arts ranged from 27
to 29 percent during the 2009 to 2013 school years with no particular trend of an increase or decrease. The gap in fourth- and eighth-grade mathematics, however has decreased from a high of 27 percent to a low of 20 percent across the same time frame indicating a gradual closing of the gap between ED students and their peers. Additional positive evidence of progress in closing the achievement gap is noted. For example, in 2015, the MDE recognized 33 schools as achieving High Progress based on gains achieved by the lowest-performing student subgroups (MDE, 2015). The inconsistency of results suggests a need for continued research to understand and effectively address the challenges in high-poverty schools.

Decades of research exist confirming evidence-based practices to increase student achievement and documenting common practices present in high-performing, high-poverty schools. What is missing in high-poverty struggling schools in Mississippi to prevent such schools from consistently improving conditions for increased student performance? As stated by Elmore (2008b), “If schools are not meeting expectations for student learning, it is largely because they do not know what to do. Given the longstanding disconnect between policy and practice, neither do policymakers” (p. 217). If the statement by Elmore is applied to Mississippi’s failing schools, what then will it take to end the cycle of low performance in the state’s high-poverty struggling schools? Increased standards for student proficiency in Mississippi, the historical pattern of low performance on low standards, and some, but not consistent success in closing the achievement gap with high rates of poverty create a significant challenge for school leaders, policymakers, and training organizations, as well as an opportunity for research.
Purpose of the Study

The goal of the research was to contribute to the body of knowledge associated with policy, preparation, and support for Mississippi school leaders who accept the challenge of moving a school from struggling or failing to high performing. Social cognitive and pragmatic theory was the basis for the research focused on levels of capacity for continual improvement, also referred to as levels of coherence, in Mississippi high-needs improving (MHN-I) elementary schools and Mississippi high-needs struggling (MHN-S) elementary schools. Information regarding the capacity for continual improvement, or coherence, was gathered by administering the survey component of the Internal Coherence Assessment Protocol (ICAP) (Elmore et al., 2014). The Internal Coherence (IC) Survey is designed to examine the perceptions of teachers and administrators regarding the extent to which conditions in the school exist providing an environment conducive to continual improvement. The IC Survey includes three domains: (1) Leadership for Instructional Improvement with 19 indicators; (2) Organizational Processes with 26 indicators; and (3) Efficacy Beliefs with six indicators (Elmore & Foreman, 2012; Elmore et al., 2014). The IC Survey instrument is attached in Appendix A.

Mississippi high-needs schools are those eligible to receive federal Title I funds based on a minimum of 40 percent of students meeting the poverty criteria (MDE, n.d.). For the purpose of the research, MHN-I elementary schools showed improvement in student achievement outcomes over several assessment cycles as evidenced by a positive gain in school performance scores. MHN-S elementary schools did not show improvement in student achievement outcomes as evidenced by a decrease in school performance scores over comparable achievement cycles. Specificity regarding the identification of improving and struggling schools is presented in Chapter III.
Internal coherence (IC) is defined by Elmore et al. (2014) as, “…a school’s capacity to engage in deliberate improvements in instructional practice and student learning across classrooms over time, as evidenced by educator practices and organizational processes connecting and aligning work across the organization” (p. 3). Survey data were collected from MHN-I and MHN-S elementary schools with regard to strategies and practices associated with building capacity for improvement, or building coherence. The Internal Coherence (IC) Survey (Elmore et al., 2014; Elmore & Forman, 2012) was used to gather data from teachers and school leaders in participating MHN-I and MHN-S elementary schools. Information regarding the capacity for continual improvement could inform principals and support agencies regarding steps needed to move Mississippi high-needs schools from struggling to improving and ultimately, high performing.

**Purpose Statement**

The purpose of the survey-informed quantitative study was to test social cognitive and pragmatic theory comparing the capacity for continual improvement in MHN-I elementary schools to the capacity for continual improvement in MHN-S elementary schools to determine if a significant difference exists in the two types of schools. Capacity for improvement was determined by measuring IC with the IC Survey (Elmore et al., 2014) described in more detail in Chapter III. The instrument is attached in Appendix A. Variables include levels of coherence, school performance, principal tenure, and principal training program type. Relationships of capacity for improvement, IC, were explored as well with regard to school performance, principal tenure, and principal training program type. Specificity regarding hypotheses, dependent variables, independent variables, and data analysis is included in Chapter III. The study used match pairs of schools based on common attributes to provide controls for extraneous
variables including socio-economic status, school size, and grade span. Hypotheses addressing difference were measured by conducting paired-samples t-tests and independent t-tests. A t-test is appropriate to determine “the statistical significance of the mean…scores” (Gall et al., 2007). Hypotheses exploring relationship are measured by conducting Pearson’s product-moment correlations, which are “…used to determine strength and direction of a linear relationship between two continuous variables” (Laerd Statistics, 2017, p. 1). More detail regarding specific methodology is described in Chapter III.

Significance of the Study

Richard Elmore, in School Reform from the Inside Out: Policy, Practice, and Performance (2008b) states, “High-performing classrooms and schools, especially in communities with high proportions of low-income minority children, are still the rare exception rather than the rule” (p. 3). Mississippi schools had the highest percentage (29) of school-age children living in poverty in 2014 (National Center for Educational Statistics [NCES], 2016). The state also has a trend of a high percentage of schools with low school performance scores. After Mississippi shifted to more rigorous assessment systems in the 2014-2015 SY and the 2015-2016 SY, the percentage of schools scoring D or F in the state accountability system was 39 percent (without waiver application) and 38 percent respectively (MDE, n.d.). See Table 1 for detail (p. 8). The evidence is clear regarding the need for improvement in Mississippi high-poverty struggling schools.

King and Bouchard (2011), in a research paper focused on building organizational capacity in schools, reviewed research on how to best assist schools in developing the organizational capacity for improvement. The authors note the lack of impact school reform attempts have yielded and the importance of building capacity as a strategy for school
improvement. The authors’ review revealed a lack of clear direction to schools, districts, institutions, and policymakers regarding effective strategies for building the capacity of organizations for improvement.

The quality of instruction provided by the classroom teacher has the greatest effect on student achievement (Leithwood et al., 2004; Hattie, 2009; Marzano, 2000; Sanders & Horn, 1998), and school leadership is critical in creating the conditions for effective classroom instruction (Leithwood & Jantzi, 2008; Leithwood et al., 2004). Because IC provides an indication of the capacity of schools to achieve continual and sustainable improvement (Elmore et al., 2014; Fullan & Quinn, 2016), research focused on measuring the levels of coherence in Mississippi high-poverty schools could generate information and direction for improvement helpful to school leaders, district leaders, policymakers, and school leadership training organizations. Findings from the research may serve to inform school leadership policy, training, and support to significantly shift the effectiveness of school improvement efforts in Mississippi’s high-poverty struggling schools.

Tom Burnham, former State Superintendent of Schools in Mississippi, conveyed his concern for the type and quality of feedback provided to principals in Mississippi’s high-needs struggling schools to support principals in school turnaround (personal communication, October 28, 2015). Burnham’s sentiments support national researchers’ work regarding what it takes to turn schools around given the lack of evidence of reform efforts successfully leading to sustainable improvement as well as the lack of necessary supports for school leadership in doing so (Marzano, 2000; NASSP & NAESP, 2013).

Conditions at the policy level in Mississippi create an opportunity for informative data regarding Mississippi high-poverty schools. The Mississippi Department of Education (MDE)
(2016b) specified six strategic goals in a five-year strategic plan including:

1. All Students Proficient and Showing Growth in All Assessed Areas
2. Every Student Graduates from High School and is Ready for College and Career
3. Every Child Has Access to a High Quality Early Childhood Program
4. Every School Has Effective Teachers and Leaders
5. Every Community Effectively Using a World-Class Data System to Improve Student Outcomes
6. Every School and District is Rated “C” or Higher (n.p.)

The Department’s fourth goal, Every School Has Effective Teachers and Leaders, includes a strategy associated with struggling schools. The strategy is, “Provide coaching to all teachers and administrators in low-performing schools related to turnaround strategies” (MDE, 2016b, n.p.).

A number of initiatives are underway at the MDE to accomplish the goals and objectives. The initiatives include the development of an Achievement School District as an alternative or addition to the current Conservator model for intervention of chronically failing schools and districts (MDE, 2016a); a series of meetings to seek the input of school leadership through a Principals’ Advisory Group (K. Benton, personal communication, July 1, 2015); establishment of Educator and Leader Effectiveness Steering Committees to design recommendations for modifications to current annual teacher and principal evaluation systems (MDE, n.d.); and the addition of an office for Research and Development working collaboratively with Mississippi college and university education departments to expand research and collaboration opportunities across the state (J. P. Beaudoin, personal communication, November 4, 2015).
Current conditions and concerns at the MDE support the relevance and suitability of the proposed research. The research study gathered information to determine if perceived practices associated with capacity for improvement, IC, implemented in MHN-I elementary schools differ from practices implemented in MHN-S elementary schools possibly informing school leadership in developing change processes. Information regarding effective practices of leadership in MHN-I elementary schools focused on building the capacity for continual improvement has the potential to provide feedback to district and state leadership informing support efforts as well as policy. The information collected from perceptions of teachers and principals in both elementary school types (MHN-I and MHN-S) could potentially inform preparation programs for aspiring school change leaders in Mississippi’s university educational leadership programs.

Elmore (2008b) notes more research is needed to understand how schools attain improvement particularly since each school’s context is unique. As Elmore’s statement applies to Mississippi, more research is needed comparing practices in the state’s high-needs improving schools to practices in high-needs struggling schools to learn from successes in the search for common transferrable strategies and solutions. Lessons for informing policy and support to Mississippi leaders in high-needs schools may be revealed through targeted research regarding IC and leadership practices to build coherence currently in place in Mississippi high-needs schools. Copeland and Neeley (2013) contend knowledge of effective turnaround practices of successful school leaders can inform local strategies, hiring decisions, and policy and support for school leaders in turnaround situations. The research study adds to the scholarly research regarding effective support of principals leading Mississippi’s high-needs schools by providing additional insights related to school improvement within the context of local issues.
Null Hypotheses

The overarching research interest was to consider whether a statistically significant difference exists in levels of capacity for improvement, or levels of IC, in MHN-I elementary schools and MHN-S elementary schools and, if so, whether the differences are associated with differences in school performance over time. The construct of coherence in schools is emerging as a central and important factor in improving struggling schools; therefore, the research focused on the construct of IC as an indication of whether or not school leaders are implementing practices to build capacity for continual improvement and if the levels of coherence are related to the school’s performance. Levels of coherence were measured by administering the IC Survey (Elmore & Forman, 2012) to teachers and principals in identified schools. More detail regarding the instrument and methodology is outlined in the Methodology Overview section following. Research interests are stated below as null hypotheses.

H₀₁: There is no significant difference in the level of coherence in Mississippi high-needs improving (MHN-I) elementary schools and the level of coherence in Mississippi high-needs struggling elementary schools (MHN-S).

H₀₂: There is no significant relationship between the level of coherence in MHN-I elementary schools and school performance.

H₀₃: There is no significant relationship between the level of coherence in MHN-S elementary schools and school performance.

H₀₄: There is no significant difference between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-I elementary schools.

H₀₅: There is no significant difference between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-S elementary schools.
\( H_{06} \): There is no significant relationship between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-I elementary schools.

\( H_{07} \): There is no significant relationship between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-S elementary schools.

\( H_{08} \): There is no significant difference in the level of coherence in schools with principals with less than three years in the leadership role in the surveyed school and the level of coherence in schools with principals with three or more years in the leadership role in the surveyed school.

\( H_{09} \): There is no significant relationship between a principal’s number of years in the role of principal at the school and the school’s level of coherence.

\( H_{010} \): There is no significant difference in the level of coherence in schools with principals completing a traditional leadership training program and the level of coherence in schools with principals participating in a non-traditional leadership training program.

**Methodology Overview**

The methodology of the research was a survey-informed quantitative design using characteristic matched pairs to examine perceptions of Mississippi teachers and school administrators regarding the levels of IC in their respective schools thereby assessing the school’s capacity for improvement. Perceived levels of IC in elementary schools identified as MHN-I and MHN-S were tested to determine acceptance or rejection of the null hypotheses.

High-needs schools in Mississippi were identified based on the percent of poverty data utilized by the MDE to identify Title I eligibility (MDE, n.d.). Schools with a minimum of 40 percent of students in poverty were ranked based on the percent poverty divided into four categories of poverty ranges including 40 to 55, 56 to 70, 71 to 85, and greater than 85 percent.
Each school was designated as improving or struggling in two ways. The first method of identification was based on the net gain or loss of the school’s Quality of Distribution Index (QDI) score (MDE, 2012) over four years of data. The 2010-2011 SY QDI score was used as a baseline score to calculate gain or loss from the 2011-2012 SY to the 2013-2014 SY. The QDI score was appropriate in identifying improving and struggling schools as the index was calculated based on students’ achievement on statewide testing. Points were awarded for students based on their proficiency levels from Basic to Advanced with one point awarded for Basic, two points for Proficient, and three points for Advanced. As the percent of students scoring in higher performance levels increased, the school’s overall QDI score increased (MDE, 2012). Schools with a positive net gain in QDI score were identified as improving (MHN-I), and schools with a net unchanged or decreased QDI score were identified as struggling (MHN-S).

In addition to considering the QDI score net increase or decrease to identify improving and struggling schools, school performance results for the 2014-2015 SY and the 2015-2016 SY were considered using each school’s percent of students proficient, level of growth, and overall performance points. Caution was used in interpreting the results to define schools as continuing to improve or struggle due to the change in statewide assessments and accountability models for the two school years. The change in assessment and accountability models is addressed in the limitations section.

Schools were sorted to elementary and matched pairs were created in each poverty category by identifying one substantially improving school and one substantially struggling school with comparable performance starting points determined by QDI scores from the 2010-2011 SY and comparable school size. The goal was identifying several matched pairs within each poverty grouping to control for poverty, baseline achievement, school size, and grade span.
Superintendents and principals were contacted to participate in the research. School systems and schools participating were provided the IC Survey (Elmore & Forman, 2012) link through Qualtrics© (2016). Principals and teachers completed the survey, and statistical testing was conducted to test the null hypotheses. Statistical Package for Social Sciences, SPSS (version 23), was used to conduct statistical testing including descriptive statistics, independent-samples t-tests, and Pearson’s product-moment correlations (Gall et al., 2007).

Variables

The research included a cohort of MHN-I and MHN-S elementary schools matched with regard to comparable baseline performance scores, percentages of poverty, grade span, and size of school. Independent variables (IV) included school performance in hypothesis one; School IC in hypotheses two and three; Principal IC and Staff IC in hypotheses four, five, six, and seven; Principal Years in School in hypotheses eight and nine; and Principal Training Type in hypothesis 10. Dependent variables (DV) included School IC in hypotheses one, eight, nine, and 10 and school performance in hypotheses two, three, four, five, six, and seven.

Limitations of the Study

Limitations of the study included a limited sample for the research. Through non-probability purposive sampling (Laerd Statistics, 2015e), the process for identifying characteristic matched pairs of schools based on the percent of economically disadvantaged students with one improving and one struggling school in each pair resulted in a limited sample. Although the sample participants were chosen based on data as opposed to researcher selection, thus mitigating researcher bias, the generalizability of results and the opportunity for researcher bias were limitations of the sampling technique. In addition, not all schools identified for participation agreed to complete the survey, further limiting the preferred sample.
Another limiting factor was missing data. Due to school consolidations, closings, or new school additions, some schools did not meet the criteria for multiple years of assessment data and school performance difference calculations. The missing data may have had an impact on the identification of improving and struggling schools affecting the sample size. Another limiting factor was self-reported survey responses resulting in the possibility of a degree of subjectivity and a limited number of responders. The more responses received by a school, the greater the probability of minimizing the overall impact of subjectivity.

The sample of schools was limited to elementary for project manageability. As a result, one limitation of the research was the application of findings to schools with grade spans above the elementary level, defined for the research as schools with grades above the sixth.

Annual faculty and leadership turnover was a limitation. Coherence is grounded in collaboration of staff over time on the instructional core (Newmann, Smith, Allensworth, & Bryk, 2001); therefore, staff turnover could impact continual progress in attaining deep instructional program coherence. Administration of the survey during second semester may have mitigated concerns of new staff’s limited time in the school.

Another limitation was cautious use of performance data from the school years 2014-2015 and 2015-2016. Mississippi’s state-wide assessment system changed assessments in each of the school years 2014-2015 and 2015-2016. In the 2013-2014 SY, schools took the Mississippi Curriculum Test Second Edition (MCT2) for the final time. In the 2014-2015 SY, schools took the Partnership for Assessment of Readiness for College and Careers (PARCC). In the 2015-2016 SY, schools took the Mississippi Academic Assessment Program (MAAP) assessments (MDE, n.d.). Transition in assessments across three years marked the transition from assessing previous standards to assessing the Mississippi College- and Career-Ready...
Standards. Equating the results to determine accountability across three years with three different assessments could be contingent on the accuracy of the equating process; therefore, the accuracy of the data for the two school years in determining MHN-I and MHN-S elementary schools was potentially limited.

**Delimitations of the Study**

The sample was limited only to elementary schools as a means of expediting data collection and analysis due to the limited time constraints in completing the research study. The researcher was interested in the impact of levels of coherence to school performance in high-needs or high-poverty schools to determine if building IC is an effective and useful framework for improvement, therefore a non-probability purposive sample (Laerd Statistics, 2015e) of elementary high-poverty school pairs matched according to baseline QDI score, poverty range, and school size was appropriate for the research purpose.

**Definition of Terms**

For the purpose of clarity, terms specific to the content of the research proposal are defined as follows:

**Capacity building** – “…the skills, competencies, and knowledge that individuals and groups need in order to be effective at accomplishing the goals at hand” (Fullan & Quinn, 2016, p. 6)

**Change leadership** – “…the ability to take a followership to a place they have never been and are not sure they want to go” (Lezotte, 2008b, p. 2); the “‘power’ to overcome the natural inertia of the systems in place” (Lezotte, 2008a, p. 1)

**Coherence** – “…a shared depth of understanding about the purpose and nature of the work” (Fullan & Quinn, 2016, p. 1) achieved through a cycle of working together, assessing impact, refining strategies, and making adjustments as data are gathered and analyzed; “…a school’s
capacity to engage in deliberate improvements in instructional practice and student learning across classrooms, over time” (Elmore, 2000, p. 1)

Coherence-focused improvement practices – engaging in practices related to the components of the Internal Coherence Survey to build levels of capacity and efficacy for improving student achievement

Coherence making – the process of working collaboratively and collectively to build coherence, “…through purposeful action and interaction, working on capacity, clarity, precision of practice, transparency, monitoring of progress, and continuous correction” (Fullan & Quinn, 2016, p. 2)

Collective efficacy – as the practice relates to schools, “…the perceptions of teachers in a school that the faculty as a whole can execute the course of action necessary to have positive effects on students” (Goddard, 2001, p. 2); “…a strong belief among members that they can exert some measure of control over their circumstances and make a positive difference through their united effort…” (Waters & Cameron, 2007, p. 51)

Continuous school improvement – “…a never-ending cycle of self-examination and adjustment…” (Lezotte & McKee, 2002, p. ix); requires constant review of data on effectiveness of current actions in order to assess and adjust (Lezotte & McKee, 2002)

Efficacy – according to Merriam-Webster (n.d., n.p.), “The power to produce a desired result or effect”

Effective school practices – instructional and leadership practices identified through research showing evidence of significant effects on student achievement

Elementary schools – for the purpose of this study, schools with no grades higher than sixth
High-needs schools; high-poverty schools – schools identified by the MDE as eligible for Title I funding based on the percent of students meeting the poverty criteria; a minimum of 40 percent of the school’s student population identified as ED based on eligibility for free- or reduced-lunch (MDE, n.d.)

Improving schools – Mississippi high-needs elementary schools with a net increase in QDI over three school years (2011-2012, 2012-2013, and 2013-2014) with 2010-2011 SY data as baseline and an increase in school performance level points for school years 2014-2015 and 2015-2016

Improvement framework – the focus on vital evidence-based activities, behaviors, or structures serving as guidance for improvement efforts (Lezotte & McKee, 2002)

Instructional core – “The level of content, skill and knowledge of teachers, and level of student engagement” (Elmore, 2008a, p. 1)

Instructional efficacy – “…teachers’ beliefs in their capability to create high-level learning experiences and to generate from practice more and more resources for subsequent…teaching and learning over time” (Forman, 2014, p. 82)

Internal accountability – “…a high level of agreement among members of the organization on the norms, values, and expectations that shape their work” (Elmore, 2008b, p. 134)

Internal (instructional) coherence and internal (instructional) program coherence – “…a school’s capacity to engage in deliberate improvements in instructional practice and student learning across classrooms, over time…” (Elmore et al., 2014, p. 3); “…a common framework for curriculum, instruction, assessment, and learning climate…pursued over a sustained period” (Newmann et al., 2001, p. 299); “…relies on teachers collaborating across content areas and grade levels with the aim of adopting common instructional strategies and systematically building on learning in multiple contexts” (Oxley, 2008, p. 1)
Internal coherence (IC) aware – the description of a school leader who is aware of the practices in the Internal Coherence Survey and explicitly engages in the practices shown to build internal coherence

Low-performing or struggling schools – Mississippi high-needs elementary schools showing a net flat or regressing QDI over three school years (2011-2012, 2012-2013, and 2013-2014) using the 2010-2011 SY data as a baseline and consideration of accountability results for the school years 2014-2015 and 2015-2016

MHN-I elementary schools – Mississippi high-needs elementary schools showing a net increase in QDI over three school years (2011-2012, 2012-2013, and 2013-2014) using the 2010-2011 SY data as baseline and continued improvement based on accountability results for the school years 2014-2015 and 2015-2016

MHN-S elementary schools – Mississippi high-needs elementary schools showing a net flat or regressing QDI over three school years (2011-2012, 2012-2013, and 2013-2014) using the 2010-2011 SY data as a baseline and continued flat or regressing accountability results for the school years 2014-2015 and 2015-2016

Non-traditional school leadership training – training programs for school leadership including fully on-line programs as well as the Mississippi Alternate Path to Quality School Leadership Program (MAPQSLP) (Mississippi Community College Foundation, n.d.) or other alternate route certification programs

Principal efficacy – “…the degree to which principals believe they can lead future improvements in instruction in their schools…” (Jacob, Goddard, Kim, Miller, & Goddard, 2014, p. 3)

Principal Internal Coherence (IC) score – The total IC score for a school principal, ranging from zero to 250, calculated from the principal’s responses to the Internal Coherence Survey
(The) Quality of Distribution Index (QDI) – “…measures the distribution of student performance for the cut points for Basic, Proficient, and Advanced performance” (MDE, 2012, p. 31)

School Internal Coherence (IC) score – A school’s average IC score, ranging from zero to 250, calculated from each individual staff member’s IC score and the principal’s IC score

School improvement efficacy – a low-performing school principal’s confidence in their ability to do what needs to be done to attain sustainable improvement (L. Lezotte, personal communication, July 13, 2015)

Staff Internal Coherence (IC) score – An average IC score, ranging from zero to 250, for a school staff calculated from each individual staff member’s IC score

Struggling or low-performing schools – Mississippi high-needs elementary schools showing a net flat or regressing QDI over three school years (2011-2012, 2012-2013, and 2013-2014) using the 2010-2011 SY data as a baseline and consideration of accountability results for the school years 2014-2015 and 2015-2016

Shared instructional leadership – “…active, ongoing collaboration of principals and teachers on issues of teaching and learning…” (Elmore et al., 2014, p. 11)

Traditional school leadership training - University-based school leadership training, certification-producing degree program approved based on the requirements set forth by the Mississippi Institutions of Higher Learning Academic Guidelines

Turnaround and turnaround school leadership – in the context of the research, a general term for referring to the process and strategies to move a low-performing school to levels of sustainable high student achievement
Organization of the Study

Chapter I of the study provides background information. Chapter II presents a review of the literature on the topics of the historical and current state of school effectiveness, leading for school improvement, the opportunity for improvement through focusing on building coherence around instructional practice, and the implications of the research for training, support, and policy regarding Mississippi high-needs schools. Chapter III outlines the methodology for the research study with information about selection of the research sample, the survey instrument, data collection, and quantitative analysis procedures. Chapter IV provides information regarding the results of the research, and Chapter V provides a discussion of the results, implications for findings, and recommendations for future research.

Summary

One critical question in the minds of principals in Mississippi high-poverty struggling schools is likely what strategy to implement to make positive impact on student achievement. Elmore (2008b), as well as Fullan and Quinn (2016) provide direction for principals who are faced with the concern of effective improvement strategies. The authors posit the importance of coherence in schools as a driver for change and improvement. Summarized by Elmore (2008b), “Organizational coherence…is a precondition for the exercise of any effective leadership around instructional improvement” (p. 63). Fullan and Quinn (2016) state, “Coherence pertains to people individually and especially collectively…coherence consists of the shared depth of understanding about the purpose and nature of the work” (p. 1). The authors support working toward greater coherence around instructional practice as a necessary focus for improvement.
As stated by Elmore (2008b), “If schools are not meeting expectations for student learning, it is largely because they do not know what to do. And, given the longstanding disconnect between policy and practice, neither do policymakers” (p. 217). He further asserts struggling schools often implement one reform idea after another “…choosing reforms with little impact on instruction or student learning…” (p. 2).

The goal of the research was to determine the level of coherence in place in Mississippi high-needs schools and the relationship of coherence levels to each school’s performance outcomes. If the research reveals the existence or absence of effective practices impacting capacity for improvement, or coherence, results could potentially provide valuable direction for school improvement to Mississippi school leadership, district leadership, state policy and support, and educational leadership training and accrediting organizations.
CHAPTER II
REVIEW OF THE LITERATURE

Based on a review of current literature, there is evidence of mixed results from school improvement efforts in high-poverty schools, also referred to as high-needs schools (Elmore, 2000; Chenoweth, 2009; Fullan & Quinn, 2016; The Wallace Foundation, 2010). Researchers confirm the importance of effective leadership in positively impacting student achievement (Louis, Leithwood, Wahlstrom, & Anderson, 2010; NASSP & NAESP, 2013; Levine & Lezotte, 1990; McREL, 2005; Waters et al., 2003; Bryk, 2010). Mixed results of reform efforts and the importance of effective school leadership on student achievement substantiate the need for continued support of school leadership in leading school improvement.

Data reviewed for Mississippi high-needs schools show a trend of the state’s struggle with consistent and sustainable school improvement efforts. Literature reveals an emerging body of work related to the importance of building internal coherence (IC) to establish sustainable trends of improvement in struggling schools. Given the trend of school performance in Mississippi high-needs schools and the promise of coherence as a viable improvement focus, the research focused on comparing the level of IC in Mississippi’s high-needs improving elementary schools (MHN-I) and high-needs struggling elementary schools (MHN-S) to link the importance of IC to the challenge of school improvement in Mississippi. Any difference found in levels of IC may reveal information regarding training and support beneficial to school leaders tasked with achieving sustainable improvement in their respective schools.
The review of literature is organized into four broad sections: The State of School Effectiveness; Leading for School Improvement; Internal Coherence; and Training, Support, and Policy Implications for School Improvement Leadership. The review of The State of School Effectiveness literature and research includes the following subsections: National and local student achievement and High-needs schools and school improvement in Mississippi. The review of literature related to Leading for School Improvement includes the subsections: Leadership impact on student achievement and School improvement efficacy which includes topics related to effective leadership practices, leadership focus in effective schools and school improvement, and factors contributing to school failure including a culture of low expectations, a culture of isolation, and limited instructional capacity. The section also includes discussion of understanding change and leading the change process, school improvement research findings, and the importance of a framework and focus for sustaining school improvement. The review of literature regarding Internal Coherence and Sustainable Improvement includes an explanation of coherence and discussion of the attributes of coherence. Coherence attributes addressed include a focus on groups, teams, and collaborative cultures, organizational structure and school-wide improvement, instructional practice and deepening learning, individual and collective efficacy, internal accountability, and the impact of coherence on student achievement. The final section, Training, Support, and Policy Implications for School Improvement Leadership, addresses literature regarding the needs of leadership in struggling schools related to training, support, and policy. The four primary sections of the literature review establish the context for IC as a framework for addressing significant issues in high-poverty struggling schools in Mississippi and support necessary for school leaders to achieve sustainable and continual improvement.
State of School Effectiveness

National and local student achievement. Since the 1966 release of findings from the Coleman Report, also known as the Equal Educational Opportunity Survey (Edmonds, 1982), suggesting schools have little influence on educational outcome, educational researchers, practitioners, and policymakers have focused on research to determine effective strategies to increase student achievement despite a school’s demographics. Consequently, since the release of the report, the proliferation of research and information regarding effective practices in schools having positive impacts on student outcomes has increased. The research provides compelling information about what works in schools to impact student achievement outcomes (Davenport & Anderson, 2002; Chenoweth, 2009; Schmoker, 1999; Lezotte & Snyder, 2011; Marzano, 2003).

Despite overwhelming information with supportive data regarding effective, evidence-based practices for instruction and leadership, the United States continues to have a gap in student outcomes based on socioeconomic status and ethnicity (McKinsey & Company, 2009; Reardon, Kalogrides, & Shores, 2016). McKinsey and Company (2009) present analysis of the nation’s achievement gap stating, “…apart from health care, the United States spends more public funds on K-12 education than any other service” (p. 16). In 2006, the United States spent 599 billion dollars on K-12 education (McKinsey & Company, 2009). The report emphasizes the achievement gap existing between minority and majority students. According to McKinsey and Company’s research, “…the average black or Latino student is roughly 2-3 years of learning behind the average white student” (p. 18). Further, the report highlights the income achievement gap across the United States mentioning, “…the average student eligible for federally subsidized lunch is approximately two years of learning behind the average ineligible student” (p. 40). Data
also show, “….schools with majority low-income students perform worst” (McKinsey & Company, 2009, p. 42). The same source reports, “In the United States, income and race are highly correlated” (p. 46). The data presented by the research group show, “….low-income black students experience the largest achievement gap of any cohort” (p. 51).

Data on the performance of both local and national schools confirm the urgent need for effective school leadership. Achievement results from the National Association of Educational Progress (NAEP) (n.d.), a bi-annual national assessment of reading and mathematics for all states in the United States, revealed the 2015 fourth- and eighth-grade mathematics scores had decreased from the 2013 levels. In 2015, only 40 percent of fourth-graders and 33 percent of eighth-graders were proficient in mathematics. Also, reading results in 2015 were not significantly different than in 2013 with 36 percent of fourth-graders and 34 percent of eighth-graders proficient in reading. The stalled and decreasing results indicate cause for continued concern about national student achievement.

Quality Counts is published by Education Week Research Center (2015). The organization “grades” states in three categories including: (a) Chance for Success; (b) School Finance; and (c) K-12 Achievement. Researchers gave the United States an overall grade of C in 2015. Only 10 states had overall scores of B or B-. Three states scored a B in K-12 Achievement, while 23 states scored some form of D (D, D+, or D-), and two states received a score of F. The two F states were the District of Columbia and Mississippi.

High-needs schools and school improvement in Mississippi. According to the Measuring Access to Opportunity in the United States (Annie E. Casey Foundation, 2015b), “Poverty has a profoundly negative impact on children’s educational achievement…” (p. 1). Based on data in the Mississippi Kids Count 2016 Factbook (Mississippi Kids Count, 2016),
Mississippi ranks 49th in comparison to other states for the percent of students living in poverty. According to the same publication, 47 percent of black students in Mississippi live in poverty compared to 15 percent of white students. The total percent of ED students in the state based on eligibility for free- or reduced-lunches is 71 across 150 districts and 1087 schools (National Center for Educational Statistics [NCES], n.d.). Regarding the achievement gap between white and black students, according to NAEP’s analysis of the 2015 results, while the achievement gap between the two groups has consistently narrowed since 1992, Mississippi in one of the states with significant gaps in performance between the two ethnic groups (NAEP, n.d.). The high percentage of poverty and the continued significant gap between the white and black ethnic groups provides opportunities for continued focus and research regarding what works in Mississippi’s high-needs schools to improve student performance.

While data show the need to continue the focus on addressing serious educational and social issues, Mississippi is making improvement according to Mississippi Kids Count 2016 Factbook (Mississippi Kids Count, 2016). The organization reports Mississippi has improved in nine of ten categories related to well-being since 2005 including: (a) Low-birth-weight babies; (b) Infant mortality rate; (c) Child deaths; (d) Teen deaths; (e) Teen birth rate; (f) Teens who are high school dropouts; (g) Teens not attending school and not working; (h) Children living in families where no parent has full-time, year-round employment; and (i) Children living in poverty. The tenth category, Children in single-parent families, had no change from 2005 to 2014 (Mississippi Kids Count, 2016, p. 3).

Student achievement outcomes in Mississippi are both encouraging and concerning. For example, Mississippi’s NAEP results in 2015 fared better than the nation’s results. Mississippi and the District of Columbia were the only two states or jurisdictions with significant gains in
fourth-grade mathematics and reading for schools participating in the assessment. Conversely, participating Mississippi schools showed no significant gains in eighth-grade mathematics and reading. The eighth-grade math and reading scores were lower by one scale-score point and were not significantly different than in 2013 (NAEP, n.d.). According to NCES (n.d.), the positive news is the percent of Mississippi students scoring proficient on NAEP in both reading and mathematics in grades four and eight has consistently increased since 1992. The negative news is the increase lags behind the national average growth in the percent of proficiency. Further, when comparing performance levels of Proficient between Mississippi assessment standards and NAEP for 2013, student achievement proficiency on Mississippi’s fourth-grade reading and eighth-grade math equates to the achievement level of Basic on NAEP (Bandeira de Mello, Bohrnstedt, Blankenship, & Sherman, 2015). Across multiple categories of well-being, data gathered by the Annie E. Casey Foundation (2016) shows Mississippi has an overall rank of 50th across all four categories utilized to compile data including: (a) Economic well-being; (b) Education; (c) Health; and (d) Family and community. Mississippi ranks 47th in the Education category considering the percent of students not attending early childhood educational programs, the percent of fourth-graders not proficient in reading, the percent of eighth-graders not proficient in mathematics, and the percent of high school students not graduating on time (Annie E. Casey Foundation, 2016).

Data on statewide assessments for Mississippi’s students reveal cause for concern. The percent of schools meeting Annual Measurable Objectives (AMO) for all three areas including reading/language arts, mathematics, and other academic indicators from 2012 to 2015 under ESEA Flexibility is low. Only 16 percent of Title I schools (115 of 720) in 2012, 16 percent of Title I schools (115 of 717) in 2013, and four percent of Title I schools (33 of 717) in 2014 met...
AMO targets (MDE, 2014b). The state shifted to more rigorous assessment standards in 2015 and 2016 (MDE, n.d.). The percent of students in all Mississippi schools not meeting the proficiency requirements of PARCC during 2015 ranged from 66.9 percent on the third-grade mathematics assessment to 79.8 percent on the seventh-grade mathematics assessment. For grades tested in English language arts, the percent of students not meeting proficiency requirements ranged from 50.7 percent on the English II assessment to 71.9 percent on the fifth-grade assessment (MDE, 2015). On the Mississippi Assessment Program (MAP) assessment in 2016, the statewide percent of students below proficient in English language arts was 67.3, and the percent of students below proficient in mathematics was 68.9 (MDE, 2016). Considering these facts together, the performance in Mississippi schools is unacceptable indicating the critical need for improvement and support for the state’s lowest-performing schools provided by local educational agencies, the Department of Education, leadership training programs, and other educational support organizations.

In the search for solutions to local and national school improvement issues, school leadership must be considered (Elmore, 2000; Elmore, 2008b; Reeves, 2006; The Wallace Foundation, 2010). According to Leithwood et al. (2004), “It turns out that leadership not only matters: it is second only to teaching among school-related factors in its impact on student learning” (p. 3). The authors note, “the impact of leadership tends to be greatest in schools where the learning needs of students are most acute” (p. 3). Elmore (2004) clarifies further by stating, “High performing classrooms and schools, especially in communities with high proportions of low-income minority children, are still the rare exception rather than the rule” (p. 3). Elmore (2004) defines leadership as “…the guidance and direction of instructional improvement” (p. 57). Building from the understanding of each point: (a) the importance of
leadership; (b) the impact of leadership in high-poverty schools; (c) the limited cases of high-performing, high-poverty schools; and (d) the purpose or definition of school leadership, the sections of the literature review will present a case for the research by addressing the importance of school leadership in school reform, what schools leaders must know and be able to do to impact improvement, and a basis for focusing on building IC as an improvement strategy.

**Leading for School Improvement**

Concern and research regarding the impact of principal leadership on student achievement, effective leadership practices for high student performance, and the need to provide more effective training and support to principals in challenging schools has received increased attention. Former United States Secretary of Education, Arnie Duncan, speaking at The Wallace Foundation’s National Conference on Educational Leadership in 2009, shared the state of education and the urgency to improve student outcomes (The Wallace Foundation, 2010). Secretary Duncan also shared the Department of Education’s strategies to support improving schools and remarked, “All those things work only if we have great principals in our schools…” (p. 21). Following his comments regarding the importance of school leadership in addressing the gap in student performance, he shared the concern the country has “…dramatically under-invested in principal leadership” (p. 22). Comments ended with a call to provide principals with the training and support necessary to be successful in the nation’s most challenging schools. Secretary Duncan’s comments underscore the importance of school leadership training, support, and focus to impact school performance issues in Mississippi.

The Leading for School Improvement section of the literature review establishes a foundation for the research comparing differences in the capacity for improvement in Mississippi’s high-needs improving and struggling schools. The topics are consistent with
former Secretary Duncan’s call for action. The topics begin with consideration of the impact of leadership on student achievement followed by information contributing to a leaders’ sense of efficacy for school improvement. Understanding change and leading the change process as well as impact of school improvement efforts is presented. The topics conclude with the importance of a focus and framework in leading school improvement initiatives.

**Leadership impact on student achievement.** Research and practice confirm the necessity of effective leadership for attaining sustainable school improvement (The Wallace Foundation, 2010; Leithwood et al., 2004). To understand the importance of leadership in the school improvement equation, the strength of the impact of principals or school leaders on student achievement is addressed.

Waters et al., (2003) completed a meta-analysis of 30 years of research conducted in more than 2000 schools regarding the effect of school leadership on student achievement. The meta-analysis includes research utilizing quantitative student achievement data measured by an objective assessment as the dependent variable (DV) and teacher perception of leadership as the independent variable (IV) (p.4). The review of available research yields, “…21 specific leadership responsibilities significantly correlated with student achievement” (p. 5). The researchers’ findings indicate the average effect size of the relationship between leadership and achievement is .25. Explaining the effect, the authors state a principal performing as average, at the 50th percentile, on the 21 leadership responsibilities who increases their leadership effectiveness by one standard deviation would impact student achievement by 10 percentile points.

Branch, Hanushek, and Rivkin (2013) also conducted research with the goal of identifying the impact of school leadership on student outcomes and identifying specific
information on effective leadership practices. The authors’ research spanned seven years and included over 7,000 principals with 28,000 principal observations. An effect size of .21 is noted when calculating school principals’ impact on student achievement. The researchers found an even greater impact of school leadership on student achievement in high-poverty schools. According to the authors, “On average, across all schools, the impact of having a principal one standard deviation more effective than the average principal is as much as seven additional months of learning in a single academic year” (p 65). Further, the authors state “…ineffective principals lower achievement by the same amount” (p. 63).

Robinson, Lloyd, and Rowe (2008) conducted a review of the research on the impact of leadership on student achievement comparing transformational leadership practices and instructional leadership practices. The researchers found a greater impact on student achievement for practices focusing on instruction and learning. Leadership practices associated with planning, coordinating, and evaluating teachers showed lower gains (p. 635). The authors conclude a principal’s time and effort spent on building the capacity of teachers for effective instruction is more impactful on student achievement than other school leadership practices.

The research references above provide evidence indicating leadership has an important impact on student achievement. Given the urgency of the national and local (Mississippi) school improvement issues, the need for information and support to leadership in high-needs, low-performing schools is a critical concern.

**School improvement efficacy.** Bandura’s research (1977) indicates the level of one’s efficacy impacts the amount of effort applied to a task and the amount of endurance in which an individual engages despite complications and adversities. Jacob et al. (2014) related efficacy to school leaders by stating, “The construct of principal efficacy…refers to the degree to which
principals believe that they can lead future improvements in instruction in their schools…” (p. 3).

Regarding the complexities of moving a high-needs school from struggling to high performing, Branch, Hanushek, and Rivkin (2012) conducted research seeking information on principal effectiveness and found the variance in principal effectiveness “…increases with the poverty rate” (p. 27). Further, the authors found “…a large variance in underlying skills of leaders entering high-poverty schools” (p. 28). All three considered together – self-efficacy, principal efficacy, and principal effectiveness in relation to school improvement – suggest a construct of efficacy in the context of school improvement (L. Lezotte, personal communication, July 13, 2015). The construct is referred to in subsequent content as school improvement efficacy. The basis for the specific construct is emerging through literature and research regarding what principals have to know and be able to do to achieve sustainable improvement in challenging school contexts detailed in the literature review.

“There are virtually no documented instances of troubled schools being turned around in the absence of intervention by talented leaders” (Leithwood et al., 2004, p. 17). Given the statement, the state of student achievement in Mississippi’s high-needs schools and the established impact of leadership on student achievement, what do school leaders in high-poverty struggling schools need to know and be able to do to achieve sustainable improvement? What are the factors and information school leaders would need to know to be efficacious regarding the task of school improvement – what factors does the review of literature suggest would contribute to school improvement efficacy?

The review of literature reveals key information important for informing school leaders’ practices in the work of improving low-performing schools including knowledge of effective leadership practices, leadership focus in effective schools and school improvement, and factors
contributing to school failure. Knowledge of each topic provides information and guidance in addressing the complexity of school improvement and is informative for a leader’s school improvement efficacy.

**Effective leadership practices.** The importance of understanding effective leadership practices is central to the work of leaders in all schools and particularly in struggling schools. The early work of researchers Kouzes and Posner in *The Leadership Challenge* (2012), reported individuals expect four things from leaders listed in the order of importance: (1) Trustworthiness; (2) Competence; (3) Forward-looking mindset; and (4) Enthusiasm. Also, the Professional Standards for Educational Leaders, 2015 (National Policy Board for Educational Administration, 2015) are outlined to provide school leaders with standards to use as “guideposts” (p. 1) for directing the work of maximizing impact on student learning. The standards for educational leaders include: (1) Mission, Vision, and Core Values; (2) Ethics and Professional Norms; (3) Equity and Cultural Responsiveness; (4) Curriculum, Instruction, and Assessment; (5) Community of Care and Support for Students; (6) Professional Capacity of School Personnel; (7) Professional Community for Teachers and Staff; (8) Meaningful Engagement of Families and Community; (9) Operations and Management; and (10) School Improvement (p. 3).

Likewise, The Wallace Foundation (2013), an organization dedicated to the improvement of school leadership, focuses on raising levels of attention and urgency regarding school leadership support and preparation. In order to do so, the organization conducts and funds research projects related to effective school leadership and leadership development. As a result of research, the organization identified five key practices observed in the work of the most effective school leaders in terms of increasing and sustaining higher levels of student
achievement. The five practices are: (1) Shaping a vision of academic success for all students; (2) Creating a climate hospitable to education; (3) Cultivating leadership in others; (4) Improving instruction; and (5) Managing people, data, and processes to foster school improvement (p. 4).

In addition to the five practices above, Callahan, Gardner, Mendonca, and Scott’s (2014) research with social-sector leadership regards concern for the level of investment in training and support for the segment’s leadership. Researchers surveyed 200 social sector leaders in four categories of leadership effectiveness including the ability to innovate and implement, build talented teams, collaborate across the organization, and manage outcomes. Only 18 to 39 percent of responders rated themselves and their peers as strong across the four categories. The low self-ratings signal the desire and need for support to school leadership in the changing educational landscape.

**Leadership focus in effective schools and school improvement.** In order to consider evidence-based practices consistently present in effective schools, a common understanding is necessary. Lezotte and Snyder (2011) provide a clear description of effective schools:

The effective school is characterized by high overall student achievement with no significant gaps in that achievement across major subgroups in the student population. The effective school is built on a foundation of high expectations, strong leadership, unwavering commitment to learning for all, collaboration, differentiated instruction, and frequent monitoring of student achievement (p. 15).

Researchers have identified practices consistently present in schools considered to be effective. For example, early researchers, in response to the Coleman Report, identified practices existing in high-poverty, high-performing schools contributing to high student performance (Lezotte, n.d.). Findings identified five correlates common to the achieving schools
marking the beginning of the Effective Schools Movement. The correlates include instructional leadership, clear focus or vision, safe and orderly climate, high expectations, and frequent student assessment.

Leithwood et al. (2004) reviewed available research regarding educational leadership and organized key successful leadership practices into three categories. The first category is setting direction, which involves shaping the goals of the organization and fostering high expectations for performance. The second category is developing people through providing support and developing individual’s sense of responsibility for improvement efforts. The final category is implementing strategies to redesign the organization. The authors note a successful leader creates and modifies organizational structures based on the context of improvement efforts, which allows improvement efforts to be successful (p. 24).

Research conducted by McREL (2005) focuses on comparing differences between two types of schools related to key leadership roles identified through an analysis of school leadership research. The researchers compare high-needs, high-performing schools to high-needs, low-performing schools and identify significant differences in teacher perceptions regarding four components of effective schools’ practices. The four components of school leadership include Leadership, Professional Community, School Environment, and Instruction. The focus of each category follows.

- The Leadership component includes shared mission and goals, instructional guidance, and organizational change.
- The Professional Community component includes professional development, collaboration, and support for teacher influence.
• The School Environment component includes academic press for achievement, safe and orderly climate, assessment and monitoring, and productive parental involvement.

• The Instruction component includes individualizing and structuring instruction and feedback and providing challenging opportunities to learn (p. 1).

High-needs schools in the McREL research sample (2005) are schools with 50 percent or more of the students eligible for free- or reduced-priced lunch. Schools are identified as high- or low-performing based on student results higher or lower than the predicted outcomes based on socio-economic status. The research explores relationships among the four areas and considers differences in the relationships in high- and low-performing schools.

While findings showed, “…the same set of relationships applied to both the high-performing and the low-performing schools” (McREL, 2005, p. 31), significant differences exist in teacher perceptions between the two school types for the four areas. “The largest effect size for the difference is for School Environment (.67), the next is for Instruction (.34), and the third largest is for Leadership (.22)” (p. 32). The researchers interpret the results to suggest a key role of leadership is implementing strategies to impact the three areas including Environment, Instruction, and Leadership.

Various researchers categorize and label effective practices in different ways, yet commonalities exist. Across the literature, research confirms effective leadership practices in schools including developing capacity of individuals and teams, creating the organizational structure conducive to meeting improvement goals, establishing a vision and high expectations for the organization, and focusing on cultural, climate, and instructional improvement.
Factors contributing to school failure. Leithwood, Harris, and Strauss (2010) contend an understanding of factors contributing to school failure must be acknowledged and understood to successfully improve a failing school. A review of the literature reveals key factors existing in low-performing schools. For leaders to successfully bring about improvements needed to increase student achievement, they must first recognize barriers to improvement. School culture, teacher isolation, and teaching capacity are addressed as some of the barriers to improvement.

Culture of low expectations. Culture, in terms of educational organizations, is defined by Reeves (2009) as, “the way we do things around here” (p. 37). Culture is established over time as school rituals are shared and transferred from staff to staff. Cultures have power over the behaviors and beliefs of personnel within the school (Collins & Porras, 2002; Owens & Valesky, 2010). Blankstein and Noguero (2012) state a culture of low expectations for student performance is often indicative of struggling schools in which a sense of failure is normal and accepted.

For any organization or group, changing long-held traditions is difficult and creates barriers and challenges. As stated by Muhammad in Transforming School Culture (2009), “It (culture change) requires leaders adept at gaining cooperation and skilled in the arts of diplomacy, salesmanship, patience, endurance, and encouragement” (p. 16). In School Leadership that Works (Marzano et al., 2005), culture is mentioned as an area important to school leadership. The authors refer to the school leader’s ability to lead or establish a positive culture for teachers and students as a key skill. In fact, the authors also refer to a key role of leadership as an “optimizer” (p. 56) in setting a positive climate and tone.
One of the earliest and most profound statements related to a culture of low expectations is from Ron Edmonds (1979) with regard to sufficient evidence of successful high-poverty schools. Summarizing, he states:

1. We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us;
2. We already know more than we need to do that; and,
3. Whether or not we do it must finally depend on how we feel about the fact that we haven’t so far. (p. 23)

Based on Edmond’s statement, one concludes a culture of high expectations is necessary for successful schools positioning the opposite, low expectations, as a barrier to school improvement.

**Culture of Isolation.** A review of information in the literature related to practices in successful schools reveals the importance of teacher collaboration. Goddard, Hoy, and Hoy’s (2000) research focuses on the relationship between collective teacher efficacy and student achievement. Findings confirm the importance of the collective belief of teachers in their capacity to impact student learning. The authors convey strategies for building collective efficacy including teachers experiencing each others’ successes and failures, learning by observing models of effective classrooms and schools, collaboration, leveraging social capital to influence team members, interaction to assess the needs of students in comparison to learning goals, and collaboration regarding strategies to attain learning goals (Goddard et al., 2000).

**Instructional capacity.** Research confirms the effectiveness of the individual classroom teacher as the greatest predictor of student achievement (Leithwood et al., 2004; Hattie, 2009; Marzano, 2000; Sanders & Horn, 1998). Findings of research regarding effective schools
confirm the quality of instruction in effective schools is excellent, leading to the conclusion, instructional improvement is a key component of any school improvement effort (Elmore, 2000; McREL, 2005; Lezotte & Snyder, 2010; The Wallace Foundation, 2013). Fullan and Quinn (2016) emphasize the importance of building the collective capacity of teachers to learn and develop new skills to address the learning needs of their students. Also, Elmore (2008a) confirms the only way to improve schools is to work on the instruction in classrooms, and the best way to affect the improvement of teacher practice is to engage in collaboration and coherence-building around the core practice of schools which is the quality of classroom instruction.

Understanding change and leading the change process. The authors of The Leadership Challenge (Kouzes & Posner, 2012) emphasize the importance of recognizing when practices need to change as opposed to continuing the same practices and expecting results to change. Leaders must recognize and prepare for the very personal impact of change to individuals (Kotter, 2012). One central and debated concept of change includes which comes first – behavior or belief. In Leading Change in Your School (2009), Reeves discusses the debate regarding behavior and belief and which one occurs first. He stated:

...behavior precedes belief – that is, most people must engage in a behavior before they accept that it is beneficial; then they see the results, and then they believe that it is the right thing to do...implementation precedes buy-in; it does not follow it. (p. 44)

The statement has profound implications for leaders in schools in need of improvement. Buy-in is a concept often discussed in relation to change; however, according to Reeves, leaders who wait for buy-in before implementing change may never begin.
Whitaker (2010) may not necessarily disagree with Reeves’ assessment of buy-in, but he outlines three strategies for change effective in increasing buy-in. The first is setting the pace for change, which is determined by a number of factors including urgency and importance. The next strategy for change is carefully considering the amount and timing of change. The third strategy is framing the change as the team’s idea to gain buy-in. Whitaker contends a leader who understands the potential barriers to change is better equipped to navigate through potential resistance.

Collins and Porras (2004), in *Built to Last* offer recommendations to leaders faced with changing an organization. For example, the authors discuss the principle of working on organization and structure rather than crafting a lofty vision statement. Reeves’ (2009) research aligns with Collins and Porras (2004) recommending less time in strategic planning and more time in action. Reeves recommends a one-page strategic plan clearly outlining each person’s role and responsibility in moving an organization forward. The straightforward plan allows for more time in action and less time in planning.

Change leadership is particularly important to understand when leading a school in need of improvement. Lezotte and McKee (2002) note a mindset of continuous improvement “…requires schools to embrace the twin values of patience and persistence. Patience, because there are no quick fixes, and persistence, because change is never easy” (p. 36). Urgency, the need for building capacity, likely barriers, the intensity of focus, and commitment are characteristics necessary to lead a school toward becoming a learning organization.

Kotter (2012) studied organizational change and identified common and frequent but avoidable errors. Change is personal and stressful. Change leadership requires leaders who understand what resistance and barriers will be encountered and the strategies necessary to
persevere through resistance. In *Leading School Change* (2010), Todd Whitaker categorizes staff characteristics of any organization with regard to change. Whitaker notes between two and ten percent of the faculty are willing to lead improvement and will be positive influencers. He also notes 80 to 90 percent of the faculty are skillful and capable and will exhibit little resistance if provided adequate support and guidance. Whitaker finds five to ten percent of staff are mediocre and replaceable and can become resistant to improvement. School leaders need to recognize each type, understand the characteristics, and work strategically with each to reach improvement goals.

Change leadership necessary in critically failing schools is a focus in the work of Fullan et al. (2006). A study of systems able to breakthrough the low-performing ceiling and transform into effective learning organizations provides insight for change leaders. Breakthrough to a true learning organization sets systems capable of sustaining change apart from stalled systems. The research reveals characteristics and practices of breakthrough systems including: (1) Moral purpose motivates teachers; (2) Behaviors change before beliefs; (3) Shared vision and ownership are built throughout the process rather than before; (4) Adult learning occurs in the classroom; (5) Forums for teacher collaboration are crucial; (6) The system has to drive and maintain professional learning communities; (7) Capacity must be built, and a balance of accountability for improvement with the support to implement changes is necessary; (8) Opportunities to learn across schools and districts are necessary; (9) Leadership is crucial; and (10) The starting point can be varied, but improvements must become systemic (p. 88-89).

The research conducted by McREL as discussed by Waters et al. (2003) emphasized the importance of the magnitude of change necessary for improving schools. The authors describe magnitude as “first order” and “second order” change (p. 6). The authors describe first order
change as change requiring minimal effort and acceptance because willingness or foundational practices are in place to make the required change less stressful to individuals and the organization. Second order change requires significant alteration of existing practices and mindsets, and the benefit of change required is not clear or easily imagined. Adding complexity, levels of change may be different for different individuals or groups. A leader adept in understanding how change will affect individuals and groups of stakeholders may better manage the impact and implementation of change to be more effective and successful. Leaders charged with school improvement, according to the authors, must understand, “…second order changes will disrupt cooperation, a sense of well-being, and cohesion” (Waters et al., 2003).

Committed leaders at the school and district level are necessary to “…keep everyone’s eyes on the prize of improved student learning” (Schmoker, 1999, p. 111). A relentless focus on what adults can do together to respond to students’ learning needs is an indication of a school with a clear mission, focused means, and concern for mastery.

**School improvement research findings.** Since the findings of the 1966 Coleman Report (Coleman et al., 1966) regarding the significant influence of family socioeconomic status on student achievement, researchers continue to seek examples of high-poverty schools defying the findings. A review of research findings for successful or high-achieving, high-poverty schools provides insight for school leaders regarding what works to create a school culture of continuous improvement.

One body of notable research, the Tennessee Value-Added Assessment System (TVAAS), is attributed to William Sanders (Sanders & Horn, 1998). The TVAAS “…is a statistical method of determining the effectiveness of school systems, schools, and teachers…(using) statistical mixed-model theory and methodology to enable a multivariate,
longitudinal analysis of student achievement data” (Sanders & Horn, 1998, p. 249). Sanders’ findings focus on the individual impact of the classroom teacher on student achievement based on individual student growth using the student’s prior academic achievement as a baseline. Findings confirm the effectiveness of an individual classroom teacher is the greatest predictor of student growth over other factors including race, socioeconomic status of the student, class size, or heterogeneous grouping within a classroom (p. 247). The finding confirms investment in building teachers’ instructional skill through collaboration and professional development benefits student achievement.

The Council of Great City Schools conducted research on member district schools receiving federal School Improvement Grant (SIG) funds (Council of Great City Schools, 2015) comparing eligible schools receiving and not receiving SIG funding as well as higher-achieving schools not SIG eligible. Results indicate the SIG-award schools increased the percent of students in higher performance categories and decreased the percent of students in the lowest performance categories at greater rates than comparison schools. Features of more successful SIG project implementation included strong commitment and a clear plan for turnaround at the district level, focus on instructional interventions, complimentary interventions and strategies, professional development to build staff capacity, principals committed to the improvement vision and influential in motivating staff, flexibility of school administration to make necessary staff changes, and the use of data for instructional decision-making (p. 4).

Blankstein and Noguero (2012) responded to federal guidelines for school turnaround by reviewing case studies of effective school turnaround and identifying key practices leading to improvement. The authors note the following effective practices of turnaround leaders.

• Positive action taken to mark the beginning of the change process;
• Assessment of the school status to determine goals and action steps;
• Clear early corrections to build credibility and buy-in to the improvement process;
• Exposure to schools and situations similar in nature experiencing high student performance to create a vision for success;
• Student voice as part of the solution to create motivation and investment of students in learning;
• Intensive focus on improving instruction;
• A culture of problem solving;
• A reasonable number of clear and measurable goals;
• Coordination with parents and community organizations to work together meeting student needs; and
• Collaborative partnerships with other schools to share strategies and resources (p. 26, 32)

Daniel Duke and colleagues have researched the impact of a University of Virginia school turnaround specialist program (Duke, 2007). The university program is modeled after business turnaround leadership programs. Findings from studying 50 schools involved in the project include a confirmation of the importance of leadership in organizing, initiating, implementing, and monitoring turnaround actions. Duke also found literacy as a common gap in all cases of schools involved in the turnaround project confirming the importance of leadership knowledge regarding improving literacy in a turnaround situation. Personnel issues were significant in the schools studied and included issues such as resistance to change, inadequate skills to address student learning gaps, misaligned talents, and lack of experts in specific content and pedagogical areas to assist in building teacher capacity. The researchers also found a gap in
the replaced leader’s skill in managing, monitoring, and adjusting strategies once implemented. As a result, a particular necessity of turnaround specialists emerged in the area of managing and adjusting interventions as necessary. Finally, the researchers learned schools in need of improvement differed in characteristics, and while best practices are clear, turnaround leaders should be adept in adjusting and customizing tactics and action steps to the particular context of the school’s unique situation.

Research conducted by McREL (2005) compared perceptions of teachers in high-performing, high-poverty schools to perceptions in low-performing, high-poverty schools in four categories including leadership, professional community, school environment, and instruction. Findings reveal no difference in the types of high-poverty schools with regard to how schools were organized leading the researchers to conclude organization of such schools is not a factor to be addressed. The differentiation between the two types of high-poverty schools was found in the perceptions of teachers as to the quality of environment, instruction, and leadership prompting researchers to conclude the most important work of school leaders is focusing on building a professional community with a culture and environment conducive to learning and focusing on the quality of instruction.

**Focus and framework for sustainable school improvement.** Each of the research studies discussed provides guidance and information for leaders involved in school improvement efforts and suggests areas of focus most effective in attaining improved student achievement. School leaders can look further into the available research to determine more clarity on high-leverage strategies to attain sustainable improvement.

Research and writings by Lezotte confirm the importance of an improvement focus or framework as a structure for improvement (Lezotte, n.d.). In fact, Lezotte and McKee (2006)
make the following statement regarding the needs of a school leader faced with implementing significant change and improvement in schools:

Given this challenge, you, as a leader need two things: 1) the knowledge, skills, and behaviors required to initiate change and lead your faculty, staff, parents, and students in the march toward improved learning, and 2) a proven model of organizational change that is relevant to education. (p. XII)

Lezotte and McKee (2006), in order to satisfy the criteria above, recommend understanding what the research suggests regarding practices necessary for improvement and strategies to accomplish improvement goals. First, the Correlates of Effective Schools create a framework for improvement focus including: (1) Safe and Orderly Environment; (2) Climate of High Expectations for Success; (3) Instructional Leadership; (4) Clear and Focused Mission; (5) Opportunity to Learn and Student Time on Task; (6) Frequent Monitoring of Student Progress; and (7) Home-School Relations (pp. 279-283). The Effective Schools Continuous School Improvement Process outlines how to work on the Correlates. The process is outlined in the following steps: (1) Establish an inclusive and collaborative process; (2) Clarify the mission, values, and core beliefs; (3) Identify essential student learnings; (4) Study the problem using data; (5) Reflect on issues and prioritize focus; research possible solutions and set goals; (6) Plan action steps to attain goals; and (7) Implement action steps. The continuous improvement process is cyclical (Lezotte & McKee, 2006, p. XIII).
Another example of a framework for improvement is based on McREL’s meta-analyses and research on school improvement efforts. Goodwin (2010) outlines the “What Matters Most Framework” which includes: (1) Guarantee challenging, engaging, and intentional instruction; (2) Ensure curricular pathways to success; (3) Provide whole-child student supports; (4) Create high-performance school cultures; and (5) Develop data-driven, “high-reliability” systems (p. 4).

Waters et al. (2003) developed the Balanced Leadership Framework based on McREL research yielding “…21 leadership responsibilities that are significantly associated with student achievement” (p. 2). The authors make a case for the need and importance of a different kind of framework citing concern with the lack of clarity and specificity in existing research to provide principals with actionable information for school improvement. The authors note existing frameworks address practices necessary for effective schools but lack specificity of how, when, and why to deploy certain strategies and tactics within the context of a specific school environment. The authors contend successful school improvement leaders understand how and when to implement specific strategies and tactics necessary to move a school forward in the context of circumstances encountered throughout the improvement journey.

Another example of research providing direction and focus for school improvement efforts is attributed to Fullan (2011) who offers direction as a result of concern with accountability systems focused on what he describes as the “wrong drivers” (p. 3). Fullan makes a case for accountability systems designed to elicit collaborative and cohesive team work to solve issues around teaching and learning, encourage growth mindsets in teachers and leaders, and facilitate focus on all students rather than targeting specific groups of students. The areas of focus are insightful advice to school leaders regarding actions and activities likely to impact improvement in student outcomes and school performance.
Experts agree the primary responsibility of school leaders is to focus their efforts on improving teaching and learning; therefore, additional school improvement research delves deeply into instructional focus and pedagogy most impactful to student achievement. In a review of colleagues’ research on educational leadership, Hattie (2015a) emphasizes the urgency of leading instruction. His publication, *Visible Learning* (Hattie, 2009), is a synthesis of many meta-analyses of practices/influences and the impact on student achievement. His review of research includes a list of 138 influences ranked based on effect on student achievement. Descriptions of the research associated with each influence provide educational leaders with evidence of effective instructional strategies.

An investigation of school improvement research regarding leadership impact on student achievement reveals the importance and the powerful impact of focusing on instructional practice for increased learning outcomes. Through his efforts in analyzing research for *Visible Learning*, Hattie (2009) identified the most impactful leadership beliefs and practices. In an article for *Educational Leadership*, Hattie (2015a) summarizes the practices and notes the effect size (ES) of each as follows:

- Leaders who believe their major role is to evaluate their impact (ES = .91);
- Leaders who get everyone in the school working together to know and evaluate their impact (ES = .91);
- Leaders who learn in an environment that privileges high-impact teaching and learning (ES = .84);
- Leaders who are explicit with teachers and students about what success looks like (ES = .77); and
Leaders who set appropriate levels of challenge and who never retreat to “just do your best” (ES = .57) (p. 3)

Robinson et al. (2008) conducted a meta-analysis of existing research comparing two types of leadership and the impact on student achievement in an attempt to determine if specific activities and behaviors associated with different leadership types contributed more significantly to student achievement. The researchers reviewed empirical findings associated with transformational leadership and instructional leadership. Research reviewed on transformational leadership assessed staff perception of the relationships between the staff and the school leader. Research reviewed on instructional leadership assessed school leaders’ level of involvement and leading in the work of teaching and learning. The work of teaching and learning includes teaching strategies, pedagogy, and data analysis. The researchers also reviewed surveys associated with empirical studies on the two leadership types and categorized survey items into associated groupings of five practices.

The findings of Robinson et al. (2008) note an effect on student achievement of .11 for transformational leaders and an effect on student achievement of .42 for instructional leaders. The second component of the research focused on categorizing survey items and yielded effects for five sets of related leadership activities listed below.

- Establishing goals and expectations – mean effect size .42;
- Strategic resourcing – mean effect size .31;
- Planning, coordinating, and evaluating teaching and the curriculum – mean effect size .42;
- Promoting and participating in teacher learning and development – mean effect size .84; and
• Ensuring an orderly and supportive environment – mean effect size .27 (p. 656)

Elmore (2008a) also emphasizes the importance of focusing on teaching and learning and the instructional core as the ultimate determinant of student performance and thus accountability. He describes the instructional core as three connected components including content, teacher knowledge and skill, and learner engagement. Elmore states the three are inseparable and one cannot change without affecting the other two. Forman (2014) builds on Elmore’s concept of the instructional core in her research regarding teacher instructional efficacy by noting teachers may be efficacious, but what they are efficacious about matters. Further, she contends when teachers are collectively efficacious about effective instructional practice related to the academic task at hand, student achievement increases. Consideration of school leadership practices in creating the conditions by which teachers’ collective instructional efficacy is strengthened is an important consideration for school improvement.

Summarizing the research findings confirms the importance of a framework and focus for sustainable school improvement and the impact of establishing structures and processes to increase coherence around the instructional core (Elmore, 2000; Elmore, 2008a; Fullan & Quinn, 2016). The task of taking a school from failing or low-performing to high-performing requires a leader be efficacious in knowing what to work on and how to work on it to stay the course through adversity to change, frustrations of staff, and the time required for improvement to impact student achievement results – the task requires school improvement efficacy.

**Internal Coherence**

Collaboration among teachers around the work of identifying, learning about, and implementing effective practices brings about a shared belief in what constitutes effective instruction. A shared belief about effective instruction – coherence – is an umbrella concept
capable of providing a framework for successful and sustainable school improvement (Newmann et al., 2001; Elmore et al., 2014; Forman, 2014). In fact, Fullan (2011) emphatically states, “Whole system success requires the commitment that comes from intrinsic motivation and improved technical competencies of groups of educators working together purposefully and relentlessly” (p. 8). The statement leads to a description of coherence and a discussion of the research supporting the significance of coherence in school improvement efforts.

**Coherence defined.** Internal coherence (IC), as defined by Elmore (2000), is “…a school’s capacity to engage in deliberate improvements in instructional practice and student learning across classrooms, over time…” (p. 1). In *Building a New Structure for School Leadership* (2000), Elmore states, “Privacy of practice produces isolation; isolation is the enemy of improvement” (p. 20). Isolation is eroded through collaboration; thus, it stands to reason coherence is best built through collaboration (Elmore et al., 2014; Ricon-Gallardo & Fullan, 2015; Fullan, 2016; Forman, 2014). Elmore associates coherence with common factors communicated in school improvement literature. The common factors include focusing on instructional improvement, efficacy of staff regarding improvement in teaching and learning, and structures in place supporting improvement (SERP, n.d.). Figure 1 depicts the components and connections of IC (SERP, n.d.)
Figure 1. Components and Connections of Internal Coherence

Marks and Printy (2003) refer to the practice of collaboration between leadership and teachers over matters of instruction as shared instructional leadership, a necessary component of building coherence in an organization. In addition to effective leadership practices, Elmore et al. (2014) emphasize the importance of organizational structures in place to allow time for collaboration and subsequent implementation of decisions made during collaboration. Another key aspect of building coherence (Elmore et al., 2014) includes the conscious use of collaboration as a strategy to impact individual and collective efficacy.

Newman et al. (2001) contend a specific operational definition and description of coherence was lacking in school improvement literature. The authors’ research on instructional program coherence related to outcomes in student achievement addresses the concern. The researchers conducted investigations in 11 elementary schools in Chicago yielding positive relationships between schools’ improving instructional program coherence and improving student achievement. Through their research methodology, Newmann et al. (2001) add clarity to
the concept and practice of coherence by operationalizing a definition of “instructional program coherence” (p. 299). The authors describe the practice of instructional program coherence as centering the collaborative work of teachers and principals on a common instructional framework and effective instructional practices within the framework. The researchers clarify the practice includes: (a) A framework aligning “…curriculum, teaching, assessment, and learning climate” (p. 299); (b) Alignment of hiring, professional development, evaluation, and expectations of professional practice with the expectations for the instructional framework; and (c) Allocation of resources, including time, funds, professional development, school events, staff assignments, and teaching resources, as examples, all focused on improving IC.

**Coherence attributes.** Fullan and Quinn (2016) as well as Elmore et al. (2014) convey the pivotal impact deepening coherence has on organizational effectiveness. Although the authors organize information regarding coherence attributes into slightly different categories, the attributes are consistent. Each author’s description includes a focus on groups, teams, and collaborative culture, improving organizational structures and school-wide processes for improvement, improving instructional practice to deepen learning, and individual, as well as collective efficacy, all of which develop internal accountability.

**Groups, teams, and collaborative culture.** A focus on effective collaboration brings about coherence and is a worthwhile strategy to be implemented by a principal in a challenging school situation (Newmann et al., 2001; Reeves, 2009; Fullan, 2016; Elmore et al., 2014; Goddard, Goddard, and Tschannen-Moran, 2007). According to Ricon-Gallardo and Fullan (2015), effective collaboration improves the skill of the individuals participating in collaborative efforts and positively impacts student learning contributing to positive school improvement outcomes. According to the authors’ review of research, essential features for effective
collaboration include:

- Focusing on ambitious student learning outcomes linked to effective pedagogy;
- Developing strong relationships of trust and internal accountability;
- Continuously improving practice and systems through cycles of collaborative inquiry;
- Using deliberate leadership and skilled facilitation within flat power structures;
- Frequently interacting and learning inwards;
- Connecting outwards to learn from others;
- Forming new partnerships as among students, teachers, families, and communities;
- Securing adequate resources to sustain the work (p. 5)

Effective collaboration, according to the authors, is critical to improving the practice of teachers which is critical to attaining a significant improvement in student achievement (Ricon-Gallardo & Fullan, 2015). Forman (2014) contends what teachers work on collaboratively matters to their efficacy and offers a clarification regarding the description of collective instructional efficacy. Forman contends collective instructional efficacy is specific to effective instructional strategies in context of the learning task or tasks at hand.

Fullan and Quinn (2016) refer to collaborative culture as “growth culture” (p. 47) and contend effective collaboration vertically and horizontally develops deep connections among individuals, a shared understanding of the organization’s expectations for practice, leadership capacity of individuals, the importance of the work, and builds sustainability of improvement efforts. The authors state, “It is this consistent, collective shaping and reshaping of ideas and solutions that forge deep coherence across the system” (p. 47). Elmore et al. (2014) include collaboration as a pivotal component of IC confirming an organization learns to function as one unit regarding what is expected and acceptable in teaching and learning through collaboration.
Organizational structures and school-wide improvement processes. The importance of organizational learning is evident in school improvement literature. Individually, a teacher’s impact on student learning affects one classroom of students. Teachers working collectively between and within grade levels and content areas impacts learning and improvement of individuals and drives improvement of the organization (Goddard et al., 2000; King & Bouchard, 2011; SERP, n.d.).

The role of school leadership in building capacity is to assess, implement, and align structures, processes, procedures, and resources to improvement goals. (Elmore et al., 2014; Fullan & Quinn, 2016). Principals are responsible for creating the conditions through which teachers are afforded the time, direction, and support to collaborate over, implement, observe, discuss, and reflect on strategies for improvement and impact on student outcomes (Marzano et al., 2005; Fullan & Quinn, 2016; Elmore et al., 2014; Newman et al., 2001).

A research paper by King and Bouchard (2011) contributes to the knowledge base of effective practice in increasing schools’ organizational capacity for improvement. The research paper includes a review of the Wisconsin Idea Leadership Academy (WILA) school reform project involving collaborative efforts for school improvement among the University of Wisconsin, the Wisconsin Department of Public Instruction, school districts, and schools. The goal of the project is to build the capacity of all organizations to work together effectively for school reform. The coaching and collaboration project focuses on building school capacity, strengthening the instructional core, and equity and excellence for all students. Conclusions from studying the WILA project include four findings regarding how to most effectively build organizational capacity. First, the work must capitalize on strengths “…but get to the weaknesses of the instructional core as soon as possible” (p. 664). In addition, the work must
eliminate ineffective practice while implementing effective practice. Also, necessary changes to
district practices must be addressed as they are revealed; otherwise, improvements are not
sustainable. Finally, building organizational capacity depends on building the capacity of
teachers individually and collectively, as well as building the capacity of leaders. Therefore, the
process of building coherence must be malleable, adapting to changing context as individuals
and the organization improve.

*Instructional practice and deepening learning.* School improvement literature and
research conveys the importance of focusing on instructional practice improvement to improve
student learning. By definition, IC is “…a school’s capacity to engage in deliberate
improvements in instructional practice and student learning across classrooms, over time”
(Elmore, 2000, p. 1). Elmore (2008a) defines the instructional core as three elements including,
“The level of content, skill and knowledge of teacher, and the level of student engagement…”
stating the only way to improve school performance is to improve the instructional core (p. 1).
He contends there are seven principles of improving the instructional core: (1) The instructional
core includes the three elements outlined above; (2) When one part of the core is changed, all
three change; (3) Teachers may deliver common curriculum at different levels of effectiveness;
(4) The tasks students engage in predict performance; (5) Teachers must really attend to what
students are doing in a collective effort to build common notions of effective instructional
practice; (6) We learn to improve practice by collectively engaging in practice; and (7)
Developing a common language and description of effective practice is brought about by
working together to describe, observe, and analyze practice in order to predict resulting student
performance and adjust accordingly (Elmore, 2008a, p. 1-2). Teachers should consider observed
practices, debrief on impact, and discuss strategies to add, delete, or modify for maximum
student achievement. Elmore contends the key to improvement is engaging in the work of improving practice together and collaborating over what is working and what is not to continue refining classroom practices in a collaborative environment (2008a).

**Individual and collective efficacy.** Efficacy is defined as, “The power to produce a desired result or effect” (Merriam-Webster, n.d., n.p.). Individuals exhibit levels of efficacy and groups exhibit collective levels of efficacy. Bandura (1997) defines collective efficacy as “…the group’s shared belief in its conjoint capabilities to organize and execute courses of action required to produce given levels of attainments” (p. 477). Waters and Cameron (2007) describe collective efficacy as “…a strong belief among members that they can exert some measure of control over their circumstances and make a positive difference through their united effort…” (p. 51). Collective efficacy, as the practice relates to schools, “…refers to the perceptions of teachers in a school that the faculty as a whole can execute the course of action necessary to have positive effects on students (Goddard, 2001, p. 2). Forman (n.d.) describes the importance of individual efficacy of teachers in the context of school improvement by discussing how the success of individual teachers in implementing new strategies decided on by the group, for example, impacts the individual’s efficacy. The impact, then, contributes to or diminishes a group’s collective efficacy. According to Goddard et al., (2000) collective efficacy is an important factor in understanding the impact schools have on student achievement. The authors’ review of evidence suggests a focus on increasing teachers’ collective efficacy as an important factor contributing to an environment of continuous improvement.

Goddard et al. (2000) researched the relationship between teacher collective efficacy and student achievement. Findings confirmed a significant positive relationship between the two factors. The researchers found “…a one unit (scale score) increase in collective teacher efficacy
is associated with an increase of more than 40 percent of one standard deviation in student achievement” (p. 501). The application of the researchers’ findings to the challenge of improving schools confirms the importance of leadership building teachers’ collective sense of efficacy. The authors contend a faculty working together confident in their collective capacity to meet student achievement goals has a greater impact on student learning than a faculty with low collective efficacy beliefs.

Eells (2011) conducted a meta-analysis of 26 research studies to determine the variance in effect sizes of the relationship between collective teacher efficacy and student achievement across factors including content area, grade level, and time of collective data capture – whether before or after a student achievement measure. Eells’ findings showed overall strong positive relationships between collective teacher efficacy and student achievement. Effect sizes ranged from 0.537 to 0.628. According to Eells, the results of the meta-analysis are generalizable due to the diverse nature of the samplings included in the research reviewed.

Principals creating opportunity for teachers to learn together by collaborating over common goals (Ricon-Gallardo & Fullan, 2015) impacts individual and collective efficacy and thus student achievement (Goddard et al., 2000). In fact, Bandura (1993) stated higher levels of collective efficacy of teachers in high-poverty, high-minority schools result in higher levels of student achievement leading one to the conclusion high rates of collective efficacy assist in overcoming the impact of poverty on student achievement. Recommendations to school leaders include implementing strategies to build collective efficacy such as viewing models of effective practices, collaboration, discussion of successes in teaching, and ongoing professional learning (Ricon-Gallardo & Fullan, 2015; Fullan & Quinn, 2016; Elmore, 2004; Elmore et al., 2014).

**Internal accountability.** The importance of internal accountability in improvement
efforts is a critical ingredient for the success of a school responding to external accountability (Fullan & Quinn, 2016; Elmore, 2004; King & Bouchard, 2011). Internal accountability derives from the relationship among three factors in schools including “…individual conceptions of responsibility; shared expectations among school participants and stakeholders; and internal and external accountability mechanisms” (SERP, n.d., n.p.). The Strategic Educational Research Partnership (SERP) publication explains organizations with low internal accountability operate in a culture of isolation in which response to external accountability pressures is dependent upon individual notions of responsibility. On the other hand, organizations with high internal accountability have a shared sense of expectation and responsibility for student learning and, as a result, develop internal mechanisms to hold themselves accountable for student learning.

Social capital and group norms are aspects and outcomes of collaboration important in the process of school improvement and the development of internal accountability (Fullan & Quinn, 2016; Owens & Valesky, 2010). Fullan and Quinn (2016) define social capital as “…the quality of the group” (p. 6). The power of using collaboration to foster internal accountability applies the understanding of the importance of leveraging social capital to attain improvement goals. Members of a group learn collaboratively, and pressure is exerted on individual members of the group to meet the expectations of the group for improving practice to impact student learning (Fullan & Quinn, 2016).

**Impact to achievement.** Leithwood et al. (2004) share evidence of leadership impact on student achievement. The authors confirm three basic practices of leaders with regard to effective schools including setting direction, developing people, and redesigning organizations (p. 9). The authors’ publication includes a call for more research leading to better understanding of specific practices necessary for significant school improvement.
Goodwin (2010) reviewed research conducted over time by McREL to distil practices with the greatest impact on student achievement and particularly with high-poverty minority students. The outcome of Goodwin’s review resulted in the, “What Matters Most Framework” which includes the following components:

- Guarantee challenging, engaging, and intentional instruction
- Ensure curricular pathways to success
- Provide whole-child student supports
- Create high-performance school cultures
- Develop data-driven, ‘high-reliability’ systems (p. 4)

The components confirm the foundational principles of IC. The consistency of expectations, understanding, and practice built through collaboration of staff regarding the important components of effective learning brings about instructional and program coherence and builds internal accountability (Elmore et al., 2014; Fullan & Quinn, 2016). The language used in the four publications reviewed above have semantic differences; however, where descriptions of each component are considered, alignment is clear. Following the alignment and progression of the research, as illustrated in Table 2, reveals increasing specificity for school leaders regarding evidence-based practices for leading a school organization to high performing.
### Table 2
Alignment and Evolution of Four Milestone Research Findings

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<td><strong>1. Setting Directions</strong> (p. 8)</td>
<td>1. Guarantee challenging, engaging, and intentional instruction (p. 5)</td>
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<td>2. Ensure curricular pathways to success (p. 5)</td>
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<td><strong>2. Developing People</strong> (p. 8)</td>
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<td>4. Provide whole-child student supports (p. 5)</td>
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<td>4. Individual and Collective Efficacy Beliefs (p. 17)</td>
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Training, Support, and Policy Implications for School Improvement Leadership

Leithwood et al. (2004) firmly state research shows no evidence of effective schools in the absence of effective leadership. The authors further confirm research shows the impact of leadership on student learning is more significant in schools with the most need. “These results, therefore, point to the value of changing, or adding to, the leadership capacities of underperforming schools as part of their improvement efforts or as part of school reconstitution” (Leithwood et al., 2004, p. 5).

The inconsistency of improvement in Mississippi’s high-poverty schools, along with the research base for effective school improvement, naturally leads to the question of how Mississippi system leaders can more effectively and efficiently support school leaders in implementing evidence-based leadership strategies resulting in significant and sustainable improvement. System leaders include school system personnel, colleges and university educational leadership experts, Department of Education personnel, state policymakers, and local and national organizations supporting school leaders in Mississippi.

School leadership preparation research was conducted by The Stupski Foundation (McIver et al., 2009), an organization dedicated to researching strategies and solutions to increase the college- and career-readiness of traditionally underserved populations including students of poverty and color. The foundation’s literature review findings lead to recommendations for improvement in leadership preparation, support, and evaluation including:

(a) Remake of school management structure allowing more time for focused instructional leadership by school leaders;
(b) Inclusion of school leadership training to understand and build responsive school cultures around the needs of diverse learner groups;
(c) Expanding programs focused on effective leadership practices to extend the tenure of principals in high-needs schools;
and (d) Redesign of principal evaluation programs to align with and reveal principals’ strengths and gaps in leading improvement thus providing direction for relevant supports leading to improvement in leadership capacity and effectiveness (McIver et al., 2009, p. 2-3).

Support for school leaders is also a major component of an initiative begun in 2011 by The Wallace Foundation working with six large school districts to identify the most effective practices in developing the highest quality school leaders and effective practices for providing support once hired and placed (Turnbull, Anderson, Riley, MacFarlane, & Aladjem, 2016).

Given the current climate of concern regarding the effectiveness of school reform efforts (Elmore, 2008), the question of effective training and support for principals leading the nation’s most challenging schools is relevant. Traditional and non-traditional principal leadership programs in Mississippi will be explored through the research to determine any difference in school performance between the two types of leadership training. Traditional leadership training is defined as training approved through processes and policies of the Institutions of Higher Learning. Non-traditional leadership training programs include alternate routes to certification and fully on-line certification programs.

In light of the findings of the Stupski Foundation (McIver et al., 2009) and other research related to redesign, refinement, and extended support of school leaders responsible for improving quality of services to underserved student populations and the information regarding the effectiveness of a focus on building IC, the possibility of framing principal education for high-poverty, low-performing schools around the components of coherence holds promise. Building school leaders’ capacity in how to establish the conditions and guide staff in increasing coherence could be a pathway to more consistency in improving high-poverty struggling schools.
Summary

In *Building a New Structure for School Leadership*, Elmore (2000) emphatically states the dismal outcome of school reform efforts without a “…large scale improvement of instruction” (p. 2) and shares his opinion of public education falling short in accomplishing such a task. He makes clear and direct assertions against the capability of leadership to bring about the necessary shift in teaching and learning to implement more rigorous standards without the necessary training, support, and understanding of what it takes to bring about “…large scale instructional improvement” (p. 2).

Findings of the Effective Schools Research (Lezotte, n.d.), Reeves’ findings in the 90-90-90 school research (n.d.), and current research from Fullan and Quinn (2016) reveal common threads in effective improvement practice. The common threads include staff collaboration such as common scoring of student work and a focus on effective instructional practices through collaboration in lesson planning, assessment design, and professional development. The two key tenets of coherence, collaboration and focus on effective instruction are present throughout the research. The evidence is clear regarding the benefit of leadership focusing on the instructional core as a strategy for building the capacity of teachers to deliver effective instruction (Elmore, 2000; Elmore, 2008a).

A significant opportunity exists in struggling schools in Mississippi to lift the practice of administrators who choose to specialize in leading struggling schools through the path of becoming learning organizations. The focus on what is necessary for leaders to build coherence among staff is promising as a framework for training and equipping teams of select leaders to meet the challenge of improving Mississippi schools and moving Mississippi to a higher level of performance.
Chapter III reviews the methodology to be used in conducting the research study. The Population and Participants, Research Design, Instrumentation, Research Hypotheses, Data Collection Procedures, and Data Analysis Procedures describe details of the processes and procedures to be used. The null hypotheses are outlined along with a description of the validity and reliability of the instrument to be used to assess identified schools’ levels of IC, the Internal Coherence Survey (Elmore et al., 2014). The goal of the research is to assess levels of coherence in identified elementary schools to determine if a difference exists in MHN-I and MHN-S schools. Data regarding differences could suggest the potential for coherence as a framework for improvement in struggling Mississippi elementary schools as well as a framework for designing support of school leaders faced with the challenge of improving high-needs schools.
CHAPTER III
METHODOLOGY

Introduction

Chapter III describes the methodology of the survey-informed quantitative study concerning the capacity for improvement in Mississippi high-needs elementary schools. Levels of internal coherence (IC) were measured comparing the capacity of Mississippi high-needs improving (MHN-I) to Mississippi high-needs struggling (MHN-S) elementary schools. High-needs or high-poverty schools were identified based on eligibility for Title I funding. Title I eligible schools in Mississippi are schools having 40 percent or more of the student population identified as economically disadvantaged (MDE, n.d.).

High-needs elementary schools were identified for participation in the research study based on designation as improving or struggling. Four years of available accountability data expressed as Quality of Distribution Index (QDI) scores were used to calculate a net positive or net negative difference from the 2010-2011 school year (SY) to the 2013-2014 SY using the 2010-2011 SY QDI score as a baseline. Schools with a net positive difference in QDI scores were identified as improving, and schools with a net negative difference in QDI scores were identified as struggling. Designation of improving or struggling for the 2014-2015 SY and the 2015-2016 SY was based on the revised statewide accountability model and state assessment program for the corresponding school years. A revised labeling system identified each school as A, B, C, D, or F based on accumulation of School Performance Level (SPL) points awarded.
The total SPL points awarded were based on the overall percent of students proficient, growth of all students, and growth of students in the bottom quartile (MDE, n.d.) as well as other key factors. The difference in SPL points from the 2014-2015 SY to the 2015-2016 SY was considered for the status of improving or struggling in conjunction with the net positive or net negative QDI score difference over three school years (2011-2012, 2012-2013, and 2013-2014) using the 2010-2011 SY QDI score as a baseline measure.

Specific information regarding the research design, research question and hypotheses, population and participants, instrumentation, data collection, and data analysis are detailed in the chapter. The research design, population, and instrumentation describe the researcher’s interest and the design of the study. The research question and hypotheses and data analysis describe the data gathering, testing, and analysis methodology.

**Research Design**

The study was designed to determine any potential difference in the capacity for improvement in MHN-I elementary schools and MHN-S elementary schools. To ascertain capacity for improvement, IC was explored (Elmore et al., 2015; Fullan, 2016). The Internal Coherence (IC) Survey (Elmore & Forman, 2012), a cross-sectional survey (Creswell, 2014) was selected as the data collection instrument due to the advantage of using an existing valid and reliable instrument to gather data as well as the opportunity to expedite data collection. Data were collected through an online survey administered through Qualtrics© (2016) to minimize the cost of administration and to maximize the convenience of rapid data entry and results compilation.

Comparisons of data between and within schools were analyzed based on opinions of a sample of the population. By comparing levels of coherence between MHN-I and MHN-S
schools, data were available to consider a potential link between coherence and school performance levels. Data may inform training, support, and focus for improvement to leaders in high-needs schools. Data comparing teacher and principal perceptions of coherence levels within schools provides information for strategic planning for principals. More detail and the research basis for between- and within-school hypotheses are discussed in the following section.

**Research Question and Hypotheses**

The study was guided by the following question: What is the capacity of Mississippi high-needs elementary schools to attain sustainable and continuous improvement? The study compared levels of IC in MHN-I and MHN-S schools to investigate the question. MHN-I and MHN-S schools were identified by examining the increase or decrease of school performance data beginning with the baseline QDI score in the 2010-2011 SY through the school performance points assigned in the 2015-2016 SY. The following null hypotheses were explored in the research. A research basis for the hypotheses follows.

- **H₀₁**: There is no significant difference in the level of coherence in Mississippi high-needs improving (MHN-I) elementary schools and the level of coherence in Mississippi high-needs struggling elementary schools (MHN-S).
- **H₀₂**: There is no significant relationship between the level of coherence in MHN-I elementary schools and school performance.
- **H₀₃**: There is no significant relationship between the level of coherence in MHN-S elementary schools and school performance.
- **H₀₄**: There is no significant difference between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-I elementary schools.
- **H₀₅**: There is no significant difference between the principal’s perceived level of
coherence and the teachers’ perceived level of coherence in MHN-S elementary schools.

H06: There is no significant relationship between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-I elementary schools.

H07: There is no significant relationship between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-S elementary schools.

H08: There is no significant difference in the level of coherence in schools with principals with less than three years in the leadership role in the surveyed school and the level of coherence in schools with principals with three or more years in the leadership role in the surveyed school.

H09: There is no significant relationship between a principal’s number of years in the role of principal at the school and the school’s level of coherence.

H010: There is no significant difference in the level of coherence in schools with principals completing a traditional leadership training program and the level of coherence in schools with principals participating in a non-traditional leadership training program.

**Research basis for hypotheses.** The following information provides the research basis of the hypotheses. Each hypothesis extends the research of Elmore et al. (2015) as well as Fullan and Quinn (2016) regarding the importance of instructional or internal coherence as a focus for improving schools to a sample of the population of Mississippi high-needs elementary schools.

Differences in levels of coherence between MHN-I and MHN-S elementary schools were explored in the first null hypothesis. According to Hattie (2015b), the within-school variability in teacher effectiveness is greater than between-school variability suggesting a focus on decreasing the variability as an effective strategy for improvement. Confirming a difference in levels of IC between MHN-I and MHN-S elementary schools in Mississippi positions the
improvement strategy of building coherence as viable to impact school transformation. Confirming MHN-I elementary schools in Mississippi have higher levels of IC than MHN-S schools could provide insight into improvement practices and focus of school leaders in MHN-I schools.

Hypothesis two extended hypothesis one assessment of any difference in IC in the two school types, MHN-I and MNH-S, by considering any relationship between improving and struggling schools’ levels of coherence and school performance. A strong linear relationship may confirm the value of the definition of coherence presented by Elmore et al. (2014). The authors contend IC is, “…a school’s capacity to engage in deliberate improvements in instructional practice and student learning across classrooms, over time” (p. 3). A strong linear relationship could inform policy and support to school leaders in high-needs schools from school districts, the Mississippi Department of Education, leadership training organizations, and leadership support organizations.

Teachers’ and principal’s perceptions of levels of coherence within each school were assessed with the survey instrument for hypotheses four, five, six, and seven. The difference between the staff’s perception and the school principal’s perception could be useful to inform school leadership strategies and ties to research. Specifically, Reeves’ (2009) research regarding belief and buy-in states behavior precedes belief. Individuals’ acceptance and buy-in, according to Reeves, is encouraged as student response to interventions and new practices are observed. When teachers see students benefit from new practices, teachers are more likely to accept change. Research emphasizes the difficulty of implementing change and the resistance change invokes (Kotter, 2012; Whitaker, 2010; Fullan et al., 2006). Fullan and Quinn (2016) emphasize the importance of clarity in the development of coherence. Knowledge of a potential gap
between a principal’s perception and the staff’s perception of existing effective practices informs
the principal’s strategies to “…manage the transition from the current to the future state” (Fullan,
2016, p. 27). Exploring the differences in IC between the two elementary school types, MHN-I
and MHN-S, provides useful information to either accept or reject the null hypotheses.

The difference and relationship between the principal and teachers’ perception of levels
of coherence in each school type, MHN-I and MHN-S, were tested in hypotheses four, five, six,
and seven. The results inform the principal’s strategies to move the organization to a culture of
higher performance. Reeves (2009) addresses the challenge and immense difficulty of change in
an organization and cautions school leaders that staff will resist, reject, be frustrated by, and, in
some instances, be ready to accept change. He provides direction to school leaders for
increasing the acceptance level of significant change. The more leaders understand the reactions
of staff and anticipate frustrations and resistance, the more prepared leaders can be for working
through frustrations to successful implementation of change. The research supporting a linear
relationship between the principal’s perception of coherence levels and the staff’s perception,
could provide school leadership with the understanding and confidence to persevere in
implementing necessary changes despite resistance and frustration likely to be exhibited by staff,
a construct referred to in the Chapter II as school improvement efficacy.

The between-school difference of schools’ levels of coherence based on principals’
tenure leading surveyed schools was explored in hypotheses eight and nine. The question of
whether or not stability in leadership at the surveyed school has an impact on levels of coherence
is the basis for the hypotheses. Based on the research of Leithwood et al. (2004), the effect of
principal leadership on student achievement is greatest in schools with higher percentages of
poverty and ethnic minorities, and a positive impact can be realized in three years (Branch et al.,
Understanding the contribution of tenure at a school to the level of coherence in each school type, MHN-I and MHN-S, informs policy of districts and the state for the longevity of principals in the context of improving schools.

Exploring the relationship of principal tenure in improving and struggling schools to levels of coherence in hypotheses eight and nine could further inform policy and practices of the state and school districts in school improvement strategy. Effective principals are more likely to stay in a challenging school than ineffective principals (Branch et al., 2013), which is important since leadership turnover is particularly harmful in high-poverty, low-achieving schools (Beteille, Kalogrides, & Loeb, 2011). Given the research findings, if the strategy of building coherence provides principals in challenging schools with a promising framework for improvement, student achievement and a principal’s school improvement efficacy could be impacted.

The final hypothesis, hypothesis ten, compared between-school differences of principals’ leadership training type, traditional or non-traditional, and was included as an ancillary exploration based on interest. According to a review of research (Hull, 2012), the impact of the type of leadership training program, traditional or non-traditional, is not clear. However, increasing availability of non-traditional preparation programs, including exclusively virtual training, offers an opportunity to analyze data based on the variable. For the purpose of the research, traditional leadership training was defined as training approved by processes and policies of the Institutions of Higher Learning. Non-traditional leadership training programs included alternate routes to certification and fully on-line certification programs.

Independent variables (IV) in the study included school performance identified as improving and struggling based on school performance gains or losses over time. School
performance was the IV in $H_{O1}$. The label of improving or struggling was determined by increase or decrease in the QDI score and SPL points over time. Three types of IC levels including School IC, Principal IC, and Staff IC were IVs in $H_{O2}$ through $H_{O7}$. Additional IVs in $H_{O8}$ and $H_{O10}$ included principal years of experience in the school surveyed and school principals’ leadership training program type. Principals’ years of experience in schools surveyed for $H_{O8}$ were divided into two groups: principals with less than three years’ tenure in the school surveyed and principals with three or more years’ tenure in the school surveyed. School principals’ training type was divided into two categories including traditional university leadership training programs and non-traditional leadership training programs. In $H_{O9}$, principals’ number of years in the role of principal in the researched school were divided into nine categories including less than three years, three years, four to six years, seven to nine years, and 10 or more years. Dependent variables (DVs) in the study included school performance in $H_{O2}$ through $H_{O7}$ and School IC in $H_{O1}$, $H_{O8}$, $H_{O9}$, and $H_{O10}$.

An IC score was calculated and used in hypotheses testing. There were 50 items on the full IC survey with Likert-type responses. Responses were coded from zero to five with zero representing the least desirable response, highly inaccurate, and five representing the most desirable response, highly accurate. The minimum total IC score possible was zero with a maximum total IC score of 250 possible points. The codes assigned to each Likert response are identified in Attachment A, the IC Survey. Three types of IC scores were calculated including an average of all teachers’ and non-principal administrators’ scores or Staff IC, the principal’s score or Principal IC, and an average of all scores for all personnel in the school, or School IC. Ten hypotheses were tested using data gathered from the survey.
The purpose of the survey method was to generalize the findings from a selected sample to the population of high-needs elementary schools in Mississippi. The research was appropriate as results may inform school leaders, policymakers, and leadership training organizations regarding what principals in high-needs improving schools (MHN-I) do differently compared to principals in high-needs struggling schools (MHN-S) regarding implementing strategies to build the capacity of the school for improvement or to build IC. Findings potentially inform training, support, policy, and practices of school leaders.

**Population and Participants**

The research sample was drawn from the population of Mississippi elementary schools with a minimum of 40 percent of students identified as economically disadvantaged based on qualification for free- or reduced-price lunch, the criteria used in Mississippi for determining eligibility for Title I funding (MDE, n.d.). Elementary schools, for the purpose of the research, were defined as schools with student achievement data for grades three through five but no grades higher than six. The number of elementary schools meeting the poverty criteria with school performance data aligned with the research focus including a 2010-2011 SY baseline QDI score and five subsequent years of school performance data was 327 of 343 schools, or 95 percent. In addition to four years of available QDI results, data based on the difference in SPL points from the 2015-2015 SY to the 2015-2016 SY was added. Of the 327 schools meeting the research criteria, 34 were targeted for possible participation in the research generating a nonprobability purposive sample (Laerd Statistics, 2015e) equaling in excess of ten percent of the total population of elementary schools in Mississippi meeting the research criteria. To address the power of the statistical testing, a post-hoc analysis was conducted and is discussed later in the chapter.
The sample of elementary schools was selected for the study using the following multistage (Creswell, 2014) technique:

1. The population of all Mississippi schools with at least 40 percent of students classified as economically disadvantaged based on eligibility for free- or reduced-lunch was identified.

2. Schools with state performance data from the 2010-2011 SY through the 2015-2016 SY were identified, further refining the potential population for sampling.

3. All schools in the data file were labeled as elementary, middle, high, or all grades based on grade spans as specified below:
   a. Elementary – grades three through five and some with middle school grades;
   b. Middle – grades six through eight;
   c. High – grades nine through twelve and some with middle grades as well; and
   d. All – grades elementary through high school

4. The list of schools was ranked from lowest to highest percent of poverty and filtered to only elementary schools. Schools with grades no higher than sixth were targeted for the research. A total of 700 schools with some combination of grades three through high school met the research criteria. The total number of elementary schools meeting the criteria for the research was 327 of 343, 95 percent of all elementary schools in Mississippi with testing data from the 2010-2011 SY to the 2015-2016 SY.

5. The filtered list was then divided into four poverty-range groupings including:
   a. 40 to 55 percent
   b. 56 to 70 percent
c. 71 to 85 percent

d. 86 and greater percent

6. After grouping the elementary schools into poverty categories, a net QDI score difference was calculated for each school. The 2010-2011 SY QDI score was used as a baseline. The net QDI score difference was determined by calculating the score change from the baseline score through the 2013-2014 SY. Schools with a net increase in QDI score were considered improving, and schools with a flat or decrease in QDI score were considered struggling.

7. Schools were ranked within each of the four poverty groupings (see item five above) based on the QDI net change. The ranked list within each poverty grouping provided ease of viewing schools based on the net QDI change.

8. The number of schools equal to approximately 10 percent of all schools in each poverty grouping was calculated. For example, if a poverty category included 40 total schools, four schools were selected for generating two matched pairs. The resulting calculation in each of the four poverty groupings was used to calculate the total number of schools included in the research sample.

9. The net QDI score differences in each grouping were reviewed to identify schools with substantial net increases and substantial net decreases in QDI scores.

10. Matched pairs with one substantially improving and one substantially struggling school were created within each poverty category based on the following criteria.

   1. Comparable baseline QDI score from the 2010-2011 SY;

   2. Comparable size of school; and

   3. Comparable grade span of school
11. School Performance Level (SPL) total points based on proficiency percentages and percent growth met (all students and lowest 25 percent) for the 2014-2015 SY and the 2015-2016 SY were reviewed to calculate differences for additional data to determine improving and struggling schools.

The targeted nonprobability, purposive sample (Laerd Statistics, 2015e) of schools equaled a minimum of 10 percent of the high-poverty Mississippi elementary school population meeting the research criteria. See Table 3 for detail regarding the research sample.

Table 3

Research Sample Selection Detail

<table>
<thead>
<tr>
<th>Percent Poverty Category</th>
<th>Total Schools with Available Data</th>
<th>Total Elementary Schools</th>
<th>10 Percent Schools Selected</th>
<th>Total Matched Pairs for Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-55</td>
<td>53</td>
<td>16</td>
<td>2: 1I, 1S</td>
<td>1</td>
</tr>
<tr>
<td>56-70</td>
<td>136</td>
<td>40</td>
<td>4: 2I, 2S</td>
<td>2</td>
</tr>
<tr>
<td>71-85</td>
<td>152</td>
<td>76</td>
<td>8: 4I, 4S</td>
<td>4</td>
</tr>
<tr>
<td>86 and greater</td>
<td>359</td>
<td>195</td>
<td>20: 10I, 10S</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>700</strong></td>
<td><strong>327</strong></td>
<td><strong>34: 17I, 17S</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Note. I = Improving; S = Struggling

**Instrumentation**

The Internal Coherence (IC) Survey developed by Elmore and Forman (2012) in collaboration with the Boston Public Schools and the Strategic Education Research Partnership (SERP) was used to gather information from faculty and staff in the research sample. Permission to use the instrument was granted by Forman (personal communication, April 14, 2015). Data from the IC Survey provided information describing “a school’s capacity to engage in deliberate
improvements in instructional practice and student learning across classrooms, over time” (Stosich, 2014, p. 3). The IC Survey is designed to provide data in three domains related to the research on school improvement. The three domains are related to leadership practices, organizational processes and teams, and teacher efficacy beliefs. Detail regarding the IC Survey content is outlined in Measuring School Capacity for Continual Improvement (Stosich, 2014) and is described herein. The first survey domain is Leadership Practices for Instructional Improvement consisting of three factors with a total of 19 indicators. The second domain is Organizational Processes and Teams consisting of five factors and 26 indicators. The third domain is Teachers’ Efficacy Beliefs with one factor and six indicators after adjustments made by the author based on statistical validation. The intended purpose of the IC Survey is to “…provide diagnostic data on school-wide capacity for continuous improvement that school leaders can use to inform decision-making” (p. 10). School principals can utilize the descriptions and results of the IC Survey to plan and implement strategies and practices building the capacity of the staff to engage in continual improvement (Elmore et al., 2014; Stosich, 2014). A copy of the IC Survey is provided in Appendix A.

Validity and reliability of the IC Survey were established through the research and work of Stosich (2014). Stosich notes the protocol was developed based on school leadership and improvement research and through conducting a series of studies regarding content validity, users’ understanding of survey items, appropriate responses by users, and the factor structure of the instrument domains (Stosich, 2014, p. 4). Validity and reliability were assessed through “expert validation, cognitive interviewing, and principal components analysis” (Stosich, 2014, p. 11). Nine experts in the field of school improvement were selected for the expert review, and modifications were made based on the results of the review thus strengthening content validity.
Cognitive review participants tested the clarity of the items resulting in some modifications if multiple reviewers experienced confusion. As a result of the factor structure review analysis, Stosich made revisions to the organization of the items in the three domains (leadership practices, organizational processes, and efficacy beliefs). A Cronbach alpha was computed “to analyze the estimated internal-consistency reliability of each of these scales” (Stosich, 2014, p. 24). According to Laerd Statistics (2015a), Cronbach’s alpha is appropriate and widely used for determining the reliability of survey instruments and is commonly used with Likert questions (p. 1). The Cronbach coefficient alpha level for nine of ten scales in the three domains ranged from .86 to .97. The Cronbach coefficient alpha level for the tenth scale was .43 (Stosich, 2014, p. 42-45) resulting in deletion of the tenth scale. Stosich concludes, after instrument revisions, “Researchers can use the survey to assess the level of IC in schools and examine the relationships among factors related to school capacity for improvement” (p. 41).

**Data Collection Procedures**

Prior to conducting the research, the dissertation committee was presented the prospectus for the research study. On the committee’s approval, the Institutional Review Board (IRB) at the University of Mississippi was petitioned to obtain approval for implementing the study. Upon the authorization to proceed, superintendents in districts of the schools identified as MHN-I and MHN-S selected for the study were contacted requesting permission to contact school principals. Upon attaining permission, principals were contacted regarding the nature of the study and their acceptance of engaging in the research. The purpose of the survey and applicability of the results was discussed with principals in person or by phone. Each participating school was provided a link to the online survey instrument. Principals received a recommended administration protocol to follow for faculty completion of the IC Survey. Follow-up contact
was made to ensure instructions were clear and the survey link was functional. Any questions the principal or superintendent had were addressed.

**Data Analysis**

The quantitative research included the use of the IC Survey (Elmore & Forman, 2012) to determine levels of coherence based on perceptions of school staff and school principals. The survey included Likert scale item responses requiring a level of agreement rating for survey indicators (Gall et al., 2007). One of six response options ranging from highly inaccurate to highly accurate (see Appendix A) were selected. Selections were converted to interval scores from zero (lowest) to five (highest). Total IC scores were calculated for staff, the principal, and the school and are referred to as Staff IC, Principal IC and School IC.

Two types of student achievement measures were used to determine the school status of improving or struggling (MHN-I or MHN-S). The first type of student achievement measure, Quality of Distribution Indexes scores (QDI) (MDE, 2012), were utilized to determine a school’s net gain or loss in performance over a four-year period from the 2010-2011 to the 2013-2014 SY. SPL total points difference calculated from the 2014-2015 SY to the 2015-2016 SY were the second student achievement measures used to determine MHN-I and MHN-S research sample schools. The difference in SPL points was calculated resulting in a net points gain, loss, or no change over the two school years. The two achievement score differences related to MHN-I and MHN-S, continuous scores, were used as an IV (school performance) for $H_{O1}$ and as DVs for $H_{O2}$ through $H_{O7}$. Quantitative data were analyzed using the most current version of the Statistical Package for the Social Sciences (SPSS, version 23). School performance, School IC, Principal IC, Staff IC, and school principal years of tenure in schools surveyed are interval variables and were used as IVs for applicable hypotheses $H_{O2}$ through $H_{O9}$. The additional
variable, the type of leadership training, is a nominal, and was used as an IV in H₀₁₀. School IC and school performance are also interval DV variables for applicable hypotheses.

**Hypotheses one, four, and five – paired-samples t-test.** Hypotheses one, four, and five were each tested using a paired-samples t-test. The IV in H₀₁ was school performance determined based on the net gain or loss of QDI scores and SPL points difference from the 2010-2011 SY through the 2015-2016 SY. The dependent variable (DV) for H₀₁ was School IC determined by the average of all personnel’s IC scores based on responses to the IC Survey. The independent variables (IV) in H₀₄ and H₀₅ were Principal IC and Staff IC. The DV in H₀₄ and H₀₅ was school performance. The variables were continuous and interval.

Matched school pairs based on starting QDI score, size, and grade span were identified. Due to the comparative nature of H₀₁, H₀₄, and H₀₅, paired-samples t-tests were used. The test is appropriate to “…determine whether the difference between paired observations is statistically significantly different from zero” (Laerd Statistics, 2015c, p. 1). The four test assumptions are: 1) a continuous DV; 2) an IV with “two categorical, related groups or matched pairs;” 3) “… no significant outliers in the differences between the related groups;” and 4) normal distribution of the differences in the DV between each related group (Laerd Statistics, 2015c, p. 3).

Assumption one was met for H₀₁, H₀₄, and H₀₅ as the DV in each hypothesis was continuous in nature. Assumption two was met for H₀₁, H₀₄, and H₀₅ as the IVs, school performance, Principal IC, and Staff IC were categorical paired groups. In order to test assumptions three and four, difference scores for each matched pair of schools were calculated using the Compute feature of SPSS, version 23. Assumption three was tested through SPSS (version 23) using boxplots from a box and whisker test to test for outliers in difference scores for each matched pair of schools in the research sample. Assumption three was met for H₀₁,
H\textsubscript{O4}, and H\textsubscript{O5}. Assumption four, normality of score distribution, was tested using the Explore procedure using difference scores for each matched pair of schools in the research sample (SPSS, version 23). According to Laerd Statistics (2015c) a paired-samples \(t\)-test will tolerate some violation of normality and “still provide valid results” (p. 7). Assumption four was met for H\textsubscript{O1}, H\textsubscript{O4}, and H\textsubscript{O5}.

**Hypotheses two, three, six, seven, and nine – Pearson’s correlation and Kendall’s tau-b.** Hypotheses two, three, six, seven, and nine were all tested with either a Pearson’s product moment correlation or the nonparametric alternative, the Kendall’s tau-b. The IV in H\textsubscript{O2} and H\textsubscript{O3} was School IC. The IVs in H\textsubscript{O6} and H\textsubscript{O7} were Principal IC and Staff IC. The IV in H\textsubscript{O9} was principal years in school. All are continuous and interval. The DV in H\textsubscript{O2}, H\textsubscript{O3}, H\textsubscript{O6}, and H\textsubscript{O7} was school performance. The DV in H\textsubscript{O9} was School IC. All are continuous and interval.

A Pearson’s product-moment correlations was planned to test each hypotheses. “The Pearson product-moment correlation is used to determine strength and direction of a linear relationship between two continuous variables” (Laerd Statistics, 2017, p.1). The Pearson’s correlation between two variables ranges from perfectly negative, -1, to perfectly positive, +1. If no linear relationship exists between variables, a value of 0 will result from the Pearson’s correlation (Laerd Statistics, 2017, p. 1). There are five assumptions of the Pearson’s correlation: 1) two continuous variables; 2) continuous variables are paired; 3) a linear relationship exists between the two variables; 4) no outliers exist; and 5) bivariate normality exists.

The variables in each hypothesis were continuous; therefore, assumption one was met for H\textsubscript{O2}, H\textsubscript{O3}, H\textsubscript{O6}, H\textsubscript{O7}, and H\textsubscript{O9}. Assumption two was met for H\textsubscript{O2}, H\textsubscript{O3}, H\textsubscript{O6}, H\textsubscript{O7}, and H\textsubscript{O9} as the continuous variables are paired with only one value for each variable in each case. Assumption
three was tested by creating and examining scatter plots with SPSS (version 23). Assumption three was met for $H_{O6}$. To test assumption four, the researcher examined the scatterplots for outliers and removed any existing outliers since outliers are problematic to the value of a Pearson’s correlation coefficient (Laerd Statistics, 2017, p. 10). Assumption four was met for $H_{O6}$. Assumption five, bivariate normality, was met based on results of testing each variable for normality (Laerd Statistics, 2017, p. 11).

Violations of the assumption of linearity for $H_{O2}$, $H_{O3}$, $H_{O7}$, and $H_{O9}$ were addressed by administering the nonparametric equivalent to the Pearson’s correlation, Kendall’s tau-b. According to Laerd Statistics, (2016, p. 3), Kendall’s tau-b is appropriate when one or more assumptions of the parametric test are violated. Kendall’s tau-b measures the strength and direction of an association between two variables. The first assumption, two interval variables (Laerd Statistics, 2016, p. 3), was met as the variables are continuous. The second assumption requires paired observations. The assumption was met as each observation includes variables matched for each school. The third assumption is a monotonic relationship between the variables being tested. According to Laerd Statistics (2016, p. 3), the assumption is not strict, as the purpose of the test is to determine a monotonic relationship.

**Hypotheses eight and ten – independent-samples $t$-test.** Hypothesis eight was tested with an independent-samples $t$-test. Insufficient data were gathered to test $H_{O10}$ as all principal’s training types were traditional. The IV in $H_{O8}$ was years of experience for two independent groups, a continuous interval score. The DV in $H_{O8}$ was level of coherence, a continuous interval score.

The hypothesis was tested using an independent samples $t$-test. The $t$-test is appropriate to determine “the statistical significance of the mean…scores” (Gall et al., 2007) and is
appropriate to “…determine whether the difference between…groups is statistically significant” (Laerd Statistics, 2015b, p. 1). The independent-samples t-test requires six assumptions including: 1) a continuous DV; 2) an IV with two categorical groups; 3) independence of observations; 4) no significant outliers; 5) normal distribution of the DV for each group; and 6) homogeneity of variance in each group of IVs (Laerd Statistics, 2015b, p. 7).

Assumption one was met as the DV in H08 is continuous in nature. Assumption two was met as the IV, principals’ years of experience in the researched school, was categorical independent groups. Assumption three was met since the participants in the research belong to different school groups. Assumption four was tested through SPSS (version 23) using boxplots from a box and whisker test to test for outliers. Assumption four was met. The Explore procedure in SPSS (version 23) was used to test assumption five, normality of score distribution. According to Laerd Statistics (2015b) an independent-samples t-test will tolerate “some violation” of normality and “still provide valid results” (p. 7). Assumption five was met. Assumption six was tested using Levene’s test of equality of variances (Laerd Statistics, 2015b, p. 7). Assumption six was met.

**Power analysis.** Statistical power analysis is necessary in research to determine the likelihood of correctly rejecting a null hypothesis and avoiding a Type I error. According to Gall et al. (2007), educational researchers often use an alpha level of p < .05 as the level of rejection, therefore, the study will utilize a .05 alpha level. Because the research is focused on a specific school type and selection of participants is based on specific criteria, a posteriori or post-hoc analysis was conducted for H01 to further reduce the probability of a Type I error (Hinkle, Wiersma, & Jurs, 2003) using G*Power version 3.1 (Apponic, n.d.). The results of the Post hoc power analysis returned a power level of 1.0 (1 - β = 1.00).
Summary

Mississippi is a high-poverty state and continually ranks last or nearly last among all states in the nation on nearly every quality indicator for education. Given the research existing regarding evidence of high-poverty schools with high student achievement, the research study focuses on the construct of internal coherence which has been shown to exist in high-performing, high-needs schools (Elmore et al., 2014; Fullan & Quinn, 2016). Chapter I provided background information and justification for the study, while Chapter II provided relevant research. Chapter III outlined the methodology for conducting the research study including participants, procedures, and statistical assessments appropriate for testing each of the null hypotheses. Chapter IV will report results of the study, and Chapter V will provide discussion and implications of the research results. The research has potential to contribute to the next generation of preparing and supporting school leaders in Mississippi equipping leaders with the skills, knowledge, and capacity to address the unique challenges of leading high-poverty schools. The proposed research may serve as data to inform policies and practices of school leaders as well as district and state support processes.
CHAPTER IV
RESULTS

Introduction

The purpose of this survey-informed quantitative study was to examine the capacity for improvement Mississippi high-needs improving (MHN-I) and Mississippi high-needs struggling (MHN-S) elementary schools. Levels of instructional or internal coherence (IC) were assessed using the Internal Coherence Survey (IC Survey) developed by Elmore and Forman (2012) in collaboration with the Boston Public Schools and the Strategic Education Research Partnership (SERP). The population for the study included matched pairs of high-needs, or high-poverty, elementary schools. The high-needs school status was determined by the percent of students meeting the Mississippi criteria for economically disadvantaged students, 40 percent or greater (MDE, n.d.). Schools were matched based on a baseline Quality of Distribution Index (QDI) score and school size in order to confirm similarity in demographics and achievement. Each matched pair included one MHN-I school and one MHN-S school. A status of improving or struggling was determined based on a net positive or net negative QDI score difference over three school years (SY 2011-2012, SY 2012-2013, and SY 2013-2014) using the 2010-2011 SY as a baseline and the difference in School Performance Level (SPL) points from the 2014-2015 SY to the 2015-2016 SY. A total of 17 matched pairs of schools were identified for inclusion in the research, thereby encompassing 34 total schools. A total of 19 schools of the targeted 34 elected to participate in the research study. Of the 19 schools participating, 14 schools were
matched based on baseline QDI and size of school in order to establish seven matched pairs for statistical testing for $H_{O1}$. The total number of schools participating in the research for statistical testing of $H_{O2}$ through $H_{O10}$ was determined based on the number of schools meeting the criteria for the specific hypothesis. The population of all high-poverty elementary schools and the sample population organized by poverty category are shown in Table 4.

Table 4

Research Sample Selection and Participation Detail

<table>
<thead>
<tr>
<th>Percent Poverty Category</th>
<th>Total Schools with Available Data</th>
<th>Total Elementary Schools</th>
<th>10 Percent Schools Targeted</th>
<th>Total Matched Pairs for Targeted Sample</th>
<th>Total Participating Schools</th>
<th>Total Participating Matched Pairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-55</td>
<td>53</td>
<td>16</td>
<td>2: 1I, 1S</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>56-70</td>
<td>136</td>
<td>40</td>
<td>4: 2I, 2S</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>71-85</td>
<td>152</td>
<td>76</td>
<td>8: 4I, 4S</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>86 and greater</td>
<td>359</td>
<td>195</td>
<td>20: 10I, 10S</td>
<td>10</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>700</td>
<td>327</td>
<td>34: 17I, 17S</td>
<td>17</td>
<td>19</td>
<td>7</td>
</tr>
</tbody>
</table>

Note. I = Improving; S = Struggling

Research Instrument

The instrument used in the study to determine a school’s capacity for improvement was the Internal Coherence (IC) Survey developed by Elmore and Forman (2012) in collaboration with the Boston Public Schools and the SERP. According to Laerd Statistics (2015a), “Cronbach’s alpha is a common measure of internal consistency…used to determine how much the items on a scale are measuring the same underlying dimension” (p. 1). Cronbach’s alpha
values of .7 are considered acceptable with higher values more desirable (Pallent, 2010). Results from the Cronbach’s alpha testing representing 398 responses from 19 schools indicated all three domains of the IC Survey possessed satisfactory results (see Table 5). The IC Survey contains items organized into three domains shown in Table 5. The Cronbach’s alpha coefficient for each factor ranges from .907 to .961. Cronbach’s alpha coefficients for each of the three domains ranges from .907 to .960. The overall survey instrument Cronbach’s alpha coefficient equals .975 indicating the strength of the internal consistency of the instrument. The overall survey instrument Cronbach’s alpha coefficient is greater than the individual domains indicating the strength of covariance of the survey domains collectively.
Table 5

Cronbach Coefficient Alpha of Internal Coherence Survey, Domains, and Factors

<table>
<thead>
<tr>
<th>Type</th>
<th>Title</th>
<th>Number of Items</th>
<th>Cronbach’s alpha coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Survey</td>
<td>Internal Coherence Survey</td>
<td>50</td>
<td>.975</td>
</tr>
<tr>
<td>Domain One</td>
<td>Leadership Practices for Instructional Improvement</td>
<td>19</td>
<td>.960</td>
</tr>
<tr>
<td>Factor One</td>
<td>Leadership for Learning</td>
<td>8</td>
<td>.961</td>
</tr>
<tr>
<td>Factor Two</td>
<td>Psychological Safety</td>
<td>6</td>
<td>.912</td>
</tr>
<tr>
<td>Factor Three</td>
<td>Professional Development</td>
<td>5</td>
<td>.922</td>
</tr>
<tr>
<td>Domain Two</td>
<td>Organizational Processes and Teams</td>
<td>25</td>
<td>.951</td>
</tr>
<tr>
<td>Factor One</td>
<td>Improvement Strategy Collaboration</td>
<td>4</td>
<td>.955</td>
</tr>
<tr>
<td>Factor Two</td>
<td>Teachers’ Involvement in Instructional Decisions</td>
<td>6</td>
<td>.931</td>
</tr>
<tr>
<td>Factor Three</td>
<td>Teams’ Shared Understanding of Effective Practice</td>
<td>4</td>
<td>.910</td>
</tr>
<tr>
<td>Factor Four</td>
<td>Support for Teams</td>
<td>5</td>
<td>.919</td>
</tr>
<tr>
<td>Factor Five</td>
<td>Team Processes</td>
<td>6</td>
<td>.947</td>
</tr>
<tr>
<td>Domain Three</td>
<td>Teachers’ Efficacy Beliefs</td>
<td>6</td>
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<tr>
<td>Factor One</td>
<td>Collective Efficacy</td>
<td>6</td>
<td>.907</td>
</tr>
</tbody>
</table>

In order to determine the capacity for improvement in each elementary school included in the research sample, school principals were asked to administer the IC Survey to all certified staff and take the survey themselves. There were 50 items on the full survey requiring Likert-type responses. Responses were coded from zero to five with zero representing the least desirable response, highly inaccurate, and five representing the most desirable response, highly accurate. The minimum total Internal Coherence score possible was zero with a maximum total
Internal Coherence score of 250 possible points. The codes assigned to each Likert response are identified in Attachment A, the IC Survey. Three types of Internal Coherence scores were calculated including an average of all teachers’ and non-principal administrators’ scores or Staff Internal Coherence (Staff IC), the principal’s score or Principal Internal Coherence (Principal IC), and an average of all scores for all personnel in the school, or School Internal Coherence (School IC). Ten hypotheses were tested using data gathered from the survey. One survey item, item 26 (See Appendix A) was inadvertently omitted from the on-line survey instrument. Cronbach’s alpha coefficients were recalculated in consideration of the missing item as shown in Table 5 above.

Statistical Tests

Three statistical tests were used to analyze survey data. Hypotheses one, four, and five were tested with a paired-samples t-test which is appropriate to test two different groups of participants matched on certain characteristics and measured on the same dependent variable (Laerd Statistics, 2015c, p. 1). Hypothesis one includes a continuous dependent variable (DV), an independent variable (IV) with “two categorical, related groups or matched pairs,” no significant outliers, and normal distribution of the differences in the DV between each related group (Laerd Statistics, 2015c, p. 3).

A Pearson’s product-moment correlation was planned for hypotheses two, three, seven, and nine; however, linearity was violated. As a result, Kendall’s tau-b correlation, the nonparametric equivalent to a Pearson’s correlation, was run to measure the strength and direction of an association between variables (Laerd Statistics, 2016, p.1). There are three assumptions of the Kendall’s tau-b including two continuous variables, continuous variables which are paired, a monotonic relationship between the two variables.
Hypothesis six was tested with a Pearson’s product-moment correlation which is appropriate to determine the strength and direction of a linear relationship between two continuous variables (Laerd Statistics, 2017, p. 1). The test requires five assumptions including continuous variables, paired variables, a linear relationship, no outliers, and normality of score distribution.

Hypothesis eight was tested using an independent samples $t$-test which is appropriate to determine “…the significance of the difference between two sample means…” (Gall et al., 2007, p. 315). The independent-samples $t$-test requires six assumptions including a continuous DV, an IV with two categorical groups, independence of observations, no significant outliers, normal distribution of the DV for each group, and homogeneity of variance in each group of IVs (Laerd Statistics, 2015b, p. 7).

Hypothesis 10 was to be tested using an independent samples $t$-test; however, all participants selected the same leadership training type, therefore hypothesis ten regarding the difference in leadership training type in relation to internal coherence, could not be assessed.

**Variables**

Hypotheses included the use of achievement or school performance as variables as well School IC, Staff IC, and Principal IC scores. Other variables included principal’s years of experience, and principal’s administrative leadership training types. Explanation of how the values for the variables were determined is important in understanding and interpreting statistical findings.

The achievement/school performance variables used included two measures. The first measure to identify each high-needs school type, improving or struggling, was the net increase or decrease in QDI scores over four years of school accountability data (SY 2010-2011, SY 2011-
2012, SY 2012-2013, and SY 2013-2014). The second measure was the SPL points change over two years of school accountability data (SY 2014-2015 and SY 2015-2016). To establish credibility for using the two data points, QDI difference and points difference, to determine labels of “improving” and “struggling,” an independent samples t-test was calculated on both measures to determine the statistical significance of “the mean...scores” (Gall et al., 2007). Findings are discussed in the Data Analysis section of the chapter.

The internal coherence measure used in each associated hypothesis was dependent on the specific variable of coherence researched. Three measures of internal coherence were gathered from the survey results for each school. One measure was Staff IC which was an average of all individual teacher and non-principal administrator survey results for each school. The second measure was Principal IC which was the internal coherence score of the principal for each school. The third measure was School IC, an average of all teachers, principal, and other administrator coherence scores for each school.

The principal’s years of experience related to two questions on the IC Survey. The first question was whether the principal had been in the researched high-needs school for less than three years or three or more years. The response to the question was used as data for statistical testing of hypothesis eight. The second question was an extension of the first asking for clarification of the number of years beyond three in the researched school. The choices were four to six, seven to nine, and 10 or more.

The information in Table 6 provides a summary of null hypotheses, statistical analysis methods used, and hypotheses Independent Variables (IV) and Dependent Variables (DV).
Table 6

Summary of Hypotheses, Statistical Testing Methods, and Variables

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Statistical Test</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H₀₁</strong> There is no significant difference in the level of coherence in</td>
<td>Paired t-test</td>
<td>IV: School Performance DV: School IC</td>
</tr>
<tr>
<td>Mississippi high-needs improving (MHN-I) elementary schools and the level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of coherence in Mississippi high-needs struggling (MHN-S) elementary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H₀₂</strong> There is no significant relationship between the level of</td>
<td>Kendall’s tau-b</td>
<td>IV: School IC DV: School Performance</td>
</tr>
<tr>
<td>coherence in MHN-I elementary schools and school performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H₀₃</strong> There is no significant relationship between the level of</td>
<td>Kendall’s tau-b</td>
<td>IV: School IC DV: School Performance</td>
</tr>
<tr>
<td>coherence in MHN-S elementary schools and school performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H₀₄</strong> There is no significant difference between the principal’s</td>
<td>Paired-samples t-test</td>
<td>IV: Principal IC, Staff IC DV: School Performance</td>
</tr>
<tr>
<td>perceived level of coherence and the teachers’ perceived level of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>coherence in MHN-I elementary schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H₀₅</strong> There is no significant difference between the principal’s</td>
<td>Paired-samples t-test</td>
<td>IV: Principal IC, Staff IC DV: School Performance</td>
</tr>
<tr>
<td>perceived level of coherence and the teachers’ perceived level of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>coherence in MHN-S elementary schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H₀₆</strong> There is no significant relationship between the principal’s</td>
<td>Pearson’s Correlation</td>
<td>IV: Principal IC, Staff IC DV: School Performance</td>
</tr>
<tr>
<td>perceived level of coherence and the teachers’ perceived level of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>coherence in MHN-I elementary schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H₀₇</strong> There is no significant relationship between the principal’s</td>
<td>Kendall’s tau-b</td>
<td>IV: Principal IC, Staff IC DV: School Performance</td>
</tr>
<tr>
<td>perceived level of coherence and the teachers’ perceived level of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>coherence in MHN-S elementary schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H₀₈</strong> There is no significant difference in the level of coherence in</td>
<td>Independent t-test</td>
<td>IV: Principal Years in School DV: School IC</td>
</tr>
<tr>
<td>elementary schools with principals with less than three years in the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>leadership role in the surveyed school and the level of coherence in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>elementary schools with principals with three or more years in the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>leadership role in the surveyed school</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
H09 There is no significant relationship between a principal’s number of years in the role of principal at the elementary school and the school’s level of coherence

Kendall’s tau-b

IV: Principal Years in School
DV: School IC

H10 There is no significant difference in the level of coherence in elementary schools with principals completing a traditional leadership training program and the level of coherence in elementary schools with principals participating in a non-traditional leadership training program

Independent t-test

IV: Principal Traditional/Non-traditional Training
DV: School IC

Data Analysis

The number of schools participating in the research study totaled 19 elementary schools.

Table 7 presents the data set used for hypotheses testing.
Table 7

Data Set for Statistical Testing

<table>
<thead>
<tr>
<th>School</th>
<th>Ach Cat</th>
<th>Pov. Range</th>
<th>Principal Years in Surveyed School</th>
<th>Principal Leadership Training Type</th>
<th>Staff IC</th>
<th>Principal IC</th>
<th>School IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1A</td>
<td>MHN-I</td>
<td>1</td>
<td>Less than 3</td>
<td>202</td>
<td>200</td>
<td>202</td>
</tr>
<tr>
<td>2</td>
<td>1B</td>
<td>MHN-S</td>
<td>1</td>
<td>More than 10</td>
<td>172</td>
<td>171</td>
<td>172</td>
</tr>
<tr>
<td>3</td>
<td>2A</td>
<td>MHN-I</td>
<td>3</td>
<td>Less than 3</td>
<td>179</td>
<td>176</td>
<td>179</td>
</tr>
<tr>
<td>4</td>
<td>2B</td>
<td>MHN-S</td>
<td>3</td>
<td>Less than 3</td>
<td>190</td>
<td>208</td>
<td>191</td>
</tr>
<tr>
<td>5</td>
<td>3A</td>
<td>MHN-I</td>
<td>3</td>
<td>4 to 6</td>
<td>203</td>
<td>195</td>
<td>203</td>
</tr>
<tr>
<td>6</td>
<td>3B</td>
<td>MHN-S</td>
<td>3</td>
<td>4 to 6</td>
<td>190</td>
<td>218</td>
<td>192</td>
</tr>
<tr>
<td>7</td>
<td>4A</td>
<td>MHN-I</td>
<td>4</td>
<td>Less than 3</td>
<td>212</td>
<td>196</td>
<td>211</td>
</tr>
<tr>
<td>8</td>
<td>4B</td>
<td>MHN-S</td>
<td>4</td>
<td>More than 10</td>
<td>189</td>
<td>160</td>
<td>187</td>
</tr>
<tr>
<td>9</td>
<td>5A</td>
<td>MHN-I</td>
<td>4</td>
<td>7 to 9</td>
<td>216</td>
<td>182</td>
<td>214</td>
</tr>
<tr>
<td>10</td>
<td>5B</td>
<td>MHN-S</td>
<td>4</td>
<td>3</td>
<td>162</td>
<td>236</td>
<td>166</td>
</tr>
<tr>
<td>11</td>
<td>6A</td>
<td>MHN-I</td>
<td>4</td>
<td>4 to 6</td>
<td>237</td>
<td>250</td>
<td>238</td>
</tr>
<tr>
<td>12</td>
<td>6B</td>
<td>MHN-S</td>
<td>4</td>
<td>7 to 9</td>
<td>191</td>
<td>201</td>
<td>192</td>
</tr>
<tr>
<td>13</td>
<td>7A</td>
<td>MHN-I</td>
<td>2</td>
<td>Less than 3</td>
<td>197</td>
<td>203</td>
<td>198</td>
</tr>
<tr>
<td>14</td>
<td>7B</td>
<td>MHN-S</td>
<td>2</td>
<td>More than 10</td>
<td>165</td>
<td>209</td>
<td>167</td>
</tr>
<tr>
<td>15</td>
<td>8</td>
<td>MHN-I</td>
<td>3</td>
<td>Less than 3</td>
<td>163</td>
<td>183</td>
<td>165</td>
</tr>
<tr>
<td>16</td>
<td>9</td>
<td>MHN-I</td>
<td>4</td>
<td>Less than 3</td>
<td>215</td>
<td>222</td>
<td>216</td>
</tr>
<tr>
<td>17</td>
<td>10</td>
<td>MHN-I</td>
<td>3</td>
<td>Less than 3</td>
<td>142</td>
<td>170</td>
<td>143</td>
</tr>
<tr>
<td>18</td>
<td>11</td>
<td>MHN-I</td>
<td>4</td>
<td>7 to 9</td>
<td>211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>12</td>
<td>MHN-I</td>
<td>4</td>
<td></td>
<td>185</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Ach Cat = Achievement Category; MHN-I = Mississippi High-Needs Improving; MHN-S = Mississippi High Needs Struggling; Pov Range = Poverty Range: 1 = 40 to 55 percent; 2 = 56 to 65 percent
to 70 percent; 3 = 71 to 85 percent; 4 = 86 percent and greater; IC = Internal Coherence; IC score range = 0 to 250; School IC is an overall average of each staff member’s and principal’s total scores.

Exploratory data analysis was conducted for the sample schools using SPSS (version 23). Two continuous achievement variables determined the identification of schools as MHN-I or MHN-S. The QDI net difference for the school years 2011-2012, 2012-2013, and 2013-2014 was the first achievement variable. The points difference in the accountability score for the school years 2014-2015 and 2015-2016 was used as the second achievement variable. Independent-samples $t$-tests were run on each achievement variable to determine if the means of 12 MHN-I and seven MHN-S schools were statistically significantly different.

The first independent-samples $t$-test utilized the dependent continuous variable representing the difference between the net change in QDI score over three years for the MHN-I schools and the MHN-S schools. There were 12 MHN-I and seven MHN-S schools participating. The data contain no outliers, as assessed by inspection of a boxplot. The QDI net differences for MHN-I and MHN-S schools were normally distributed, as assessed by Shapiro-Wilk test (MHN-I: $p = .079$; MHN-S: $p = .123$). The assumption of homogeneity of variances was met as assessed by Levene’s test for equal variances ($p = .845$). Table 8 shows the mean QDI net difference of MHN-I schools ($M = 20.083$, $SD = 16.351$) is greater than the mean QDI net difference of MHN-S school ($M = -1.143$, $SD = 15.540$), a statistically significant difference, $M = 21.23$, 95% CI [5.10, 37.35], $t(17) = 2.777$, $p = .013$. Table 9 represents the independent-samples $t$-test results.
Table 8

Statistics QDI Net Difference of MHN-I and MHN-S Schools

<table>
<thead>
<tr>
<th>Schools</th>
<th>n schools</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHN-I</td>
<td>12</td>
<td>20.083</td>
<td>16.351</td>
</tr>
<tr>
<td>MHN-S</td>
<td>7</td>
<td>-1.143</td>
<td>15.540</td>
</tr>
</tbody>
</table>

Note. n = sample size; M = mean; SD = standard deviation

Table 9

Independent t-Test Results MHN-I and MHN-S Mean QDI Difference

<table>
<thead>
<tr>
<th>EV assumed</th>
<th>F</th>
<th>Sig.</th>
<th>T</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>MD</th>
<th>SDE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.040</td>
<td>.845</td>
<td>2.777</td>
<td>17</td>
<td>.013*</td>
<td>21.2262</td>
<td>7.6425</td>
</tr>
</tbody>
</table>

Note. EV = equal variances; F = f distribution; Sig. = significance level of Levene’s test; t = t statistic; df = degrees of freedom; Sig. (2-tailed) = t-test significance level; MD = mean difference; SDE = standard deviation error difference

A second independent-samples t-test for difference in the means of MHN-I and MHN-S schools utilized the continuous variable representing the difference in accountability points between the 2014-2015 SY and the 2015-2016 SY. There were 12 MHN-I and seven MHN-S schools participating. Inspection of a box and whiskers boxplot showed one outlier for MHN-I schools’ points differences and two outliers for MHN-S schools’ points differences. The points differences for MHN-I and MHN-S schools were not normally distributed, as assessed by Shapiro-Wilk’s test (MHN-I: p = .043; MHN-S: p = .002); however, according to Gall, Gall, and Borg (2007), t-tests can provide accurate estimates even under substantial violations to assumptions of normality (p. 315). There was homogeneity of variances as assessed by Levene’s test for equal variances (p = .570). Table 10 shows the mean points difference in school performance scores for MHN-I schools (M = 78.750, SD = 55.424) is greater than the mean
points difference for MHN-S schools (M = -53.857, SD = 75.847), a statistically significant difference, M = 132.61, 95% CI [69.00, 196.21], t(17) = 4.40, p = .000. Table 11 represents the independent-samples \( t \)-test results.

Table 10

Statistics Performance Level Points Difference of MHN-I and MHN-S

<table>
<thead>
<tr>
<th>Schools</th>
<th>n schools</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHN-I</td>
<td>12</td>
<td>78.750</td>
<td>55.424</td>
</tr>
<tr>
<td>MHN-S</td>
<td>7</td>
<td>-53.857</td>
<td>75.847</td>
</tr>
</tbody>
</table>

Note. n = sample size; M = mean; SD = standard deviation

Table 11

Independent \( t \)-Test Results MHN-I and MHN-S Points Difference

<table>
<thead>
<tr>
<th>MHN-I vs. MHN-S</th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>MD</th>
<th>SDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EV assumed</td>
<td>.336</td>
<td>.570</td>
<td>4.399</td>
<td>17</td>
<td>.000*</td>
<td>132.6071</td>
<td>30.1471</td>
</tr>
<tr>
<td>EV not assumed</td>
<td>4.039</td>
<td>9.801</td>
<td>.002*</td>
<td></td>
<td></td>
<td>132.6071</td>
<td>32.8301</td>
</tr>
</tbody>
</table>

Note. EV = equal variances; \( F \) – \( f \) distribution; Sig. = significance level of Levene’s test; \( t \) = \( t \)-statistic; df = degrees of freedom; Sig. (2-tailed) = \( t \)-test significance level; MD = mean difference; SDE = standard deviation error difference; *p < .005.

The following information specifies findings of data analyses for each hypothesis.

**Hypothesis one.** \( H_{01} \): There is no significant difference in the level of coherence in Mississippi high-needs improving (MHN-I) elementary schools and the level of coherence in a Mississippi high-needs struggling (MHN-S) elementary schools.

Hypothesis one was tested using a paired-samples \( t \)-test. A total of 14 of the 19 participating schools representing 294 responses were matched based on baseline QDI scores and school size to allow hypothesis testing on seven matched school pairs. Each participating school completed the IC Survey instrument. The school internal coherence (School IC) level was calculated by averaging IC Survey scores for all teachers, the principal, and other administrators.
to determine a total School IC score. Likert items were assigned values of zero through six on 50 total items creating a School IC score ranging from zero to 250.

A paired-samples t-test was used to determine whether a statistically significant mean difference existed between the School IC level of MHN-I and MHN-S schools. The dependent variable was School IC, a continuous variable, and the independent variable was school performance, a continuous variable. A paired-samples t-test includes four assumptions. The first assumption requires the dependent variable be continuous. The assumption was met as the dependent variable for the hypothesis is School IC, a continuous variable ranging from zero to 250. Assumption two requires the independent variable consist of categorical or related variables. The independent variable, school performance, included two categories of schools, MHN-I and MHN-S. The school pairs were matched based on baseline QDI score, grade span, and size of school. The third assumption of a paired-samples t-test is no outliers in the data. For the hypothesis, no outliers were detected as a result of inspection of a boxplot for values greater than 1.5 box lengths from the edge of the box; therefore, all data were retained for statistical testing. Assumption four requires normality of the data. The assumption was met since the difference between School IC scores of MHN-I and MHN-S schools was normally distributed as assessed by the Shapiro-Wilk test (p = .473). Table 12 includes statistics and paired-samples t-test results for the matched pairs.
Table 12

Statistics and $t$-Test Results MHN-I and MHN-S Matched School Pairs

<table>
<thead>
<tr>
<th>School Type</th>
<th>M IC</th>
<th>n schools</th>
<th>n responses</th>
<th>SD</th>
<th>SDE</th>
<th>$t$</th>
<th>df</th>
<th>Sig. $(2$-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHN-I</td>
<td>206.289</td>
<td>7</td>
<td>152</td>
<td>18.087</td>
<td>6.836</td>
<td>3.165</td>
<td>6</td>
<td>.019*</td>
</tr>
<tr>
<td>MHN-S</td>
<td>181.102</td>
<td>7</td>
<td>142</td>
<td>12.055</td>
<td>4.556</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n = sample size; M IC = mean Internal Coherence score; SD = standard deviation; SDE = standard deviation error mean; $t$ = $t$ statistic; df = degrees of freedom; Sig. (2-tailed) = $t$-test significance level

Results of the paired-samples $t$-test indicated a statistically significant difference in the mean School IC scores of MHN-I and MHN-S elementary schools. The mean School IC of MHN-I schools ($M = 206.289$, $SD = 18.087$) as compared to the mean School IC of MHN-S schools ($M = 181.102$, $SD = 12.055$) is a statistically significant mean difference of 25.188 (95% CI, 5.712 to 44.664), $t(6) = 3.165$, $p = .019$, $d = 1.196$. The mean difference of the School IC for MHN-I schools and MHN-S schools was significantly different from zero. Due to the findings, the null hypothesis is rejected.

Statistical power analysis was conducted on the hypothesis to determine the likelihood of correctly rejecting a null hypothesis and avoiding a Type I error. According to Gall et al. (2007), educational researchers often use an alpha level of $p < .05$ as the level of rejection, therefore, the study will utilize a .05 alpha level. Because the research was focused on a specific school type and selection of participants was based on specific criteria, a posteriori or post-hoc analysis was conducted for $H_{01}$ to further reduce the probability of a Type I error (Hinkle, Wiersma, & Jurs, 2003) using G*Power version 3.1 (Apponic, n.d.). The results of the Post hoc power analysis returned a power level of 1.0 ($1-\beta = 1.00$).
**Hypothesis two.** $H_{o2}$: There is no significant relationship between the level of coherence in MHN-I elementary schools and school performance.

The independent variable for $H_{o2}$ was School IC and the dependent variable was school performance. There were 10 of the 12 participating MHN-I schools representing 258 responses with necessary data to calculate a School IC score (Table 7). The School IC score was calculated as an average of all school personnel’s individual IC scores. Two measures were used to determine school performance including the QDI score net gain or loss and the SPL net positive or negative points change. The statistical test used to measure correlation (see below) was applied twice – once to test the correlation between QDI score difference and School IC and once to test the correlation between SPL points difference and School IC.

A Pearson’s product-moment correlation was utilized to test the hypothesis; however, the assumption of linearity was violated. Inspection of a scatterplot did not show a linear relationship between MHN-I QDI and MHN-I SLP score differences and School IC. As such, the nonparametric equivalent to Pearson’s correlation, Kendall’s tau-b, was used. According to Laerd Statistics, (2016, p. 3), Kendall’s tau-b is appropriate when one or more assumptions of the parametric test are violated. Kendall’s tau-b measures the strength and direction of an association between two variables. The first assumption was met as the two measured variables were continuous (Laerd Statistics, 2016, p. 3). The second assumption requiring paired observations was met as each observation included a School IC variable and two achievement variables (QDI score difference and SPL points difference). The third assumption is a monotonic relationship between the variables being tested. According to Laerd Statistics (2016, p. 3), the assumption is not strict, as the purpose of the test is to determine a monotonic relationship. Results of the Kendall’s tau-b are shared in Table 13.
Table 13

Kendall's tau-b MHN-I School Performance and School IC

<table>
<thead>
<tr>
<th>Variable</th>
<th>n schools</th>
<th>n responses</th>
<th>Corr. Coeff. MHN-I</th>
<th>Sig. (2-tailed) MHN-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>QDI Difference</td>
<td>10</td>
<td>258</td>
<td>.289</td>
<td>.245</td>
</tr>
<tr>
<td>SLP Points</td>
<td>10</td>
<td>258</td>
<td>.200</td>
<td>.421</td>
</tr>
</tbody>
</table>

Note: QDI Difference = net gain or loss in QDI scores over three school years; Points Difference = net positive or negative difference in SPL points over two school years; n = sample size; Corr. Coeff. = Kendall’s tau-b Correlation Coefficient; Sig. (2-tailed) = Correlation significance level

Results of the Kendall’s tau-b correlation assessing the relationship between MHN-I School IC and school performance (QDI score difference) of 10 participating schools showed a moderate positive correlation; however, the correlation was not significant, $\tau_b = .289$, $p = .245$.

The relationship of MHN-I School IC and school performance (SPL points difference) also showed a moderate positive correlation; however, the correlation was not significant, $\tau_b = .200$, $p = .421$. With these findings, the null hypothesis is accepted.

**Hypothesis three.** $H_{O3}$: There is no significant relationship between the level of coherence in MHN-S elementary schools and school performance.

The independent variable for $H_{O3}$ was School IC and the dependent variable was school performance. As two measures were used to determine school performance, the statistical test to measure correlation of School IC and school performance was utilized for each school performance variable. There were seven of seven participating MHN-S schools representing 143 responses with necessary data (principal and staff IC scores) to calculate a School IC score (Table 7).

A Pearson’s product-moment correlation was utilized to test the hypothesis; however, the assumption of linearity was violated. Inspection of a scatterplot did not show a linear
relationship between MHN-S QDI score difference and School IC or between MHN-S SLP difference and School IC. As such, the nonparametric equivalent to Pearson’s correlation, Kendall’s tau-b, was run. The first assumption of the test is two variables measured are interval. The assumption was met as the variables are continuous. The second assumption requires paired observations. The assumption was met as each observation included a School IC variable and two achievement variables (QDI score difference and SPL points difference). The third assumption is a monotonic relationship between the variables being tested. According to Laerd Statistics (2016, p. 3) the assumption is not strict, as the purpose of the test is to determine a monotonic relationship. The results of Kendall’s tau-b are shared in Table 14.

Table 14
Kendall's tau-b MHN-S School Performance and School IC

<table>
<thead>
<tr>
<th>Achievement Variable</th>
<th>n schools</th>
<th>n responses</th>
<th>Corr. Coeff. MHN-S</th>
<th>Sig. (2-tailed) MHN-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>QDI Difference</td>
<td>7</td>
<td>143</td>
<td>-.390</td>
<td>.224</td>
</tr>
<tr>
<td>SPL Points Difference</td>
<td>7</td>
<td>143</td>
<td>-.143</td>
<td>.652</td>
</tr>
</tbody>
</table>

Note: QDI Difference = net gain or loss in QDI scores over three school years; Points Difference = net positive or negative difference in SPL points over two school years; n = sample size; Corr. Coeff. = Kendall’s tau-b Correlation Coefficient; Sig. (2-tailed) = Correlation significance level; p < .05

Results of the Kendall’s tau-b correlation assessing the relationship between MHN-S School IC and school performance (QDI score difference) of seven participating schools showed a moderate negative correlation; however, the correlation was not significant, $\tau_b = -.390$, $p = .224$. The relationship of MHN-S School IC and school performance (SPL points difference) showed a small negative correlation; however, the correlation was not significant, $\tau_b = -.143$, $p = .652$. Due to the findings, the null hypothesis is accepted.
**Hypothesis four.** $H_04$: There is no significant difference between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-I elementary schools.

Hypothesis four was tested using a paired-samples $t$-test which is appropriate to determine whether, “…the mean difference between paired observations is statistically different from zero” (Laerd Statistics, 2015c, p. 1). Of the 12 MHN-I schools participating in the research study, 10 schools had both a Principal IC score, representing 10 respondents, and a Staff IC score, representing 248 respondents, meeting the criteria to be included in the data for hypothesis testing (Table 7). Likert items were assigned values of zero through five on 50 total items generating an IC Survey score ranging from zero to 250. The Principal IC score was calculated as a total score for the principal’s responses to the IC Survey items. The Staff IC score was calculated by averaging teacher and other non-principal Staff IC Survey scores for each school.

The paired-samples $t$-test was used to determine whether a statistically significant mean difference existed between the Principal IC score and the Staff IC score in each MHN-I school. The independent variables were Principal IC score and Staff IC score, both continuous variables, and the dependent variable was student achievement, a continuous variable. A paired-samples $t$-test includes four assumptions. The first assumption requires the dependent variable be continuous. The assumption was met as the dependent variable for the hypothesis was student achievement, a continuous variable. Assumption two requires the independent variable consist of categorical or related variables. The independent variable, IC score, included two categories of IC scores, the Principal IC score and the Staff IC score both from the same school. The third assumption of a paired-samples $t$-test is no outliers exist in the data. On inspection of output from the box-and-whisker test, no values greater than 1.5 box lengths from the edge of the box
existed; therefore, all data were retained for statistical testing. Assumption four requires normality of the data. The assumption was met since the difference between MHN-I schools’ Principal IC scores and Staff IC scores was normally distributed as assessed by the Shapiro-Wilk test (p = .970), which far exceeds the selected p-value. Table 15 includes statistics and paired-samples t-test results for the independent variables.

Table 15

<table>
<thead>
<tr>
<th>IC Group</th>
<th>M IC</th>
<th>n schools</th>
<th>n responses</th>
<th>SD</th>
<th>SDE</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff IC</td>
<td>196.735</td>
<td>10</td>
<td>248</td>
<td>28.028</td>
<td>8.863</td>
<td>.171</td>
<td>9</td>
<td>.868</td>
</tr>
<tr>
<td>Principal IC</td>
<td>197.799</td>
<td>10</td>
<td>10</td>
<td>23.735</td>
<td>7.506</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n schools = sample size; n responses = number of participants; M IC = mean Internal Coherence score; SD = standard deviation; SDE = standard deviation error mean; t = t statistic; df = degrees of freedom; Sig. (2-tailed) = t-test significance level

Results of the paired-samples t-test did not indicate a statistically significant difference in the means of the Principal IC score and the Staff IC score of MHN-I elementary schools. The mean Staff IC score of MHN-I schools (M = 196.735, SD = 28.028) compared to the mean Principal IC score of MHN-I schools (M = 197.799, SD = 23.735) is not a statistically significant mean difference as .96500 (95% CI, -11.794 to 13.724), t(9) = .171, p = .868, d = .054, a small effect size. The mean difference of the MHN-I schools’ Principal IC scores and Staff IC scores was not significantly different from zero, therefore, the null hypothesis is accepted.

Hypothesis five. H₀₅: There is no significant difference between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-S elementary schools.

Hypothesis five was tested using a paired-samples t-test which is appropriate to determine whether, “…the mean difference between paired observations is statistically different
from zero” (Laerd Statistics, 2015c, p. 1). Of the seven MHN-S schools participating in the research study, seven schools had both a Principal IC score, representing 7 responses, and a Staff IC score, representing 136 responses, meeting the criteria to be included in the data for H05 testing (Table 7). Likert items were assigned values of zero through five on 50 total items generating an IC Survey score ranging from zero to 250. The Principal IC score was calculated as a total score for the principal’s responses to the IC Survey items. The Staff IC score was calculated by averaging teacher and other non-principal Staff IC Survey scores for each school.

The paired-samples $t$-test was used to determine whether a statistically significant mean difference existed between the Principal IC score and the Staff IC score in each MHN-S school. The independent variables were Principal IC score and Staff IC score, both continuous variables, and the dependent variable was student performance, a continuous variable. A paired-samples $t$-test includes four assumptions. The first assumption requires the dependent variable be continuous. The assumption was met as the dependent variable for the hypothesis was student achievement, a continuous variable. Assumption two requires the independent variable consist of categorical or related variables. The independent variable, IC score, included two categories of IC scores, the Principal IC score and the Staff IC score both from the same school. The third assumption of a paired-samples $t$-test is no outliers exist in the data. On inspection of output from the box-and-whisker test, no values greater than 1.5 box lengths from the edge of the box existed; therefore, all data were retained for statistical testing. Assumption four requires normality of the data. The assumption was met since the difference between MHN-I schools’ Principal IC scores and Staff IC scores was normally distributed as assessed by the Shapiro-Wilk test ($p = .997$). Table 16 includes statistics and paired-samples $t$-test results for the independent variables.
Table 16

Statistics and Paired $t$-Test Results MHN-S Principal and Staff IC Scores

<table>
<thead>
<tr>
<th>IC Group</th>
<th>M IC</th>
<th>n schools</th>
<th>n responses</th>
<th>SD</th>
<th>SDE</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff IC</td>
<td>179.886</td>
<td>7</td>
<td>136</td>
<td>13.198</td>
<td>4.988</td>
<td>1.649</td>
<td>6</td>
<td>.150</td>
</tr>
<tr>
<td>Principal IC</td>
<td>200.429</td>
<td>7</td>
<td>7</td>
<td>26.476</td>
<td>10.007</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n schools = sample size; n responses = number of participants; M IC = mean Internal Coherence score; SD = standard deviation; SDE = standard deviation error mean; t = t statistic; df = degrees of freedom; Sig. (2-tailed) = $t$-test significance level

Results of the paired-samples $t$-test did not indicate a statistically significant difference in the means of the Principal IC score and the Staff IC score of MHN-S elementary schools. The mean Staff IC score of MHN-S schools (M = 179.886, SD = 13.198) compared to the mean Principal IC score of MHN-S schools (M = 200.429, SD = 26.476) is not a statistically significant mean difference as 20.543 (95% CI, -9.944 to 51.029), $t(6) = 1.65$, $p = .150$, $d = .623$, a medium effect size. The mean difference of the MHN-S schools’ Principal IC scores and Staff IC scores was not significantly different from zero, therefore, the null hypothesis is accepted.

**Hypothesis six.** $H_0$: There is no significant relationship between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-I elementary schools.

Hypothesis six was tested using a Pearson’s product-moment correlation, which is appropriate to determine the strength and direction of a relationship between two continuous variables (Laerd Statistics, 2017, p. 1). Of the 12 MHN-I schools participating in the research study, 10 schools had both a Principal IC score, representing 10 respondents, and a Staff IC score, representing 248 respondents, meeting the criteria to be included in the data for correlational hypothesis testing (Table 7). Likert items were assigned values of zero through five on 50 total items generating an IC Survey score ranging from zero to 250. The Principal IC
score was calculated as a total score for the principal’s responses to the IC Survey. The Staff IC score was calculated by averaging teacher and other non-principal IC Survey scores for each school.

The Pearson’s product-moment correlation was used to assess the strength and direction of a linear relationship between Principal IC score and the Staff IC score in MHN-I schools. The independent variables were Principal IC and Staff IC scores, and the dependent variable was student performance. The first assumption of a Pearson’s correlation requires continuous variables, which was met as the dependent variable and the independent variables were continuous. The second assumption is paired continuous variables, which was met. Each observation included a Principal IC score paired with a Staff IC score from the same school. Assumption three requires a linear relationship between the variables. Inspection of a scatter plot of Principal IC scores and Staff IC scores indicated a linear relationship. Assumption four requires no significant outliers in the data. Visual inspection of the scatter plot indicated no extreme outliers. Assumption five requires normality confirmed by a Shapiro-Wilk test – Principal IC (p = .236) and Staff IC (p = .546). Table 17 includes statistics and results of the Pearson’s correlation for MHN-I Principal IC scores and Staff IC scores.

Table 17

Pearson's Correlation MHN-I Principal and Staff IC Scores

<table>
<thead>
<tr>
<th>IC Group</th>
<th>n schools</th>
<th>n responses</th>
<th>Corr. Coeff.</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff IC</td>
<td>10</td>
<td>248</td>
<td>.775**</td>
<td>.008</td>
</tr>
<tr>
<td>Principal IC</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: n schools = sample size; n responses = total participants in each role group; Corr. Coeff. = Pearson’s correlation coefficient; Sig. (2-tailed) = Correlation significance level; **p < .01

Results of Pearson’s correlation indicated a strong positive correlation between Staff IC scores and Principal IC scores in MHN-I schools significant at the .01 level, r = .775, p = .008.
The results indicated a strong positive relationship exists between the perceived level of coherence of the staff and the perceived level of coherence of the principal in MHN-I schools. With these findings, the null hypothesis is rejected.

**Hypothesis seven.** $H_{07}$: There is no significant relationship between the principal’s perceived level of coherence and the teachers’ perceived level of coherence in MHN-S elementary schools.

A Pearson’s product-moment correlation was used to test the hypothesis. The results of the Pearson’s correlation showed a violation of the assumption of linearity. Inspection of a scatterplot did not show a linear relationship between MHN-S Principal IC and Staff IC scores. As such, the nonparametric equivalent to the Pearson’s correlation, Kendall’s tau-b, was used for statistical testing. According to Laerd Statistics, (2016, p. 3), Kendall’s tau-b is appropriate to use when one or more assumptions of the parametric test are violated. Kendall’s tau-b measures the strength and direction of an association between two variables. The two variables for the hypothesis were a Principal IC score and the Staff IC score in MHN-S schools. Of the seven MHN-S schools participating in the research study, all seven schools had both a Principal IC score and a Staff IC score thus meeting the criteria to be included in the data for correlational hypothesis testing (Table 7). The total number of principal responders was seven resulting in seven Principal IC scores. The total number of staff responders was 136 across the seven participating schools.

The Kendall’s tau-b requires three assumptions. The first assumption requires continuous variables. The assumption was met as the dependent variable, student achievement, and the independent variables, Principal IC and Staff IC, are continuous. The second assumption is paired continuous variables. The assumption was met as each observation included a Principal
IC score paired with a Staff IC score from the same school. The third assumption is a monotonic relationship between the variables being tested. According to Laerd Statistics (2016, p. 3), the assumption is not strict, as the purpose of the test is to determine a monotonic relationship.

Results of the Kendall’s tau-b are shared in Table 18.

Table 18

Kendall's tau-b MHN-S School Performance and School IC

<table>
<thead>
<tr>
<th>IC Group</th>
<th>n schools</th>
<th>n responses</th>
<th>Corr. Coeff.</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff IC</td>
<td>7</td>
<td>136</td>
<td>-.333</td>
<td>.293</td>
</tr>
<tr>
<td>Principal IC</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: n schools = sample size; n responses = total participants for each role group; Corr. Coeff. = Kendall’s tau-b Correlation Coefficient; Sig. (2-tailed) = Correlation significance level

Results of the Kendall’s tau-b correlation assessing the relationship between MHN-S Principal IC and Staff IC of seven participating schools showed a moderate negative correlation between the perception of the principal’s level of IC and the staff’s level of IC; however, the correlation was not significant, $\tau_b = -.333$, $p = .293$. With these findings, the null hypothesis is accepted.

**Hypothesis eight.** $H_{08}$: There is no significant difference in the level of coherence in elementary schools with principals with less than three years in the leadership role in the surveyed school and the level of coherence in elementary schools with principals with three or more years in the leadership role in the surveyed school.

An independent-samples $t$-test was utilized to test hypothesis eight. The $t$-test compared levels of School IC in 17 schools with the eight principals having less than three years of experience in the high-needs school and nine principals having three or more years of experience in the high-needs school. The independent-samples $t$-test requires six assumptions. The first assumption is a continuous dependent variable. The dependent variable was School IC, a
continuous score. The second assumption is an independent variable with two categorical groups. The independent variable was years of experience separated into the categories of less than three years of experience and three or more years of experience. The third assumption is independence of observations which is met as the School IC scores in each principal’s school are independent of each other. The fourth assumption of an independent-samples $t$-test is the data contain no outliers. On inspection of output from the box-and-whisker test, no values greater than 1.5 box lengths from the edge of the box existed; therefore, all data were retained for statistical testing. Assumption five requires normality of the data. The assumption was met since the difference between Principal IC scores with less than three years as the principal in the high-needs school and Principal IC scores with three or more years of experience in the high-needs school was normally distributed as assessed by the Shapiro-Wilk test ($p = .608$ for less than three years; $p = .454$ for three or more years). Assumption six, homogeneity of variance for each independent group, is met as assessed by Levene’s test for equal variances ($p = .758$).

Statistics are included in Table 19. Independent-samples $t$-test results are included in Table 20.

Table 19

Statistics Principal IC Score Based on Years Leading High-Needs Schools

<table>
<thead>
<tr>
<th>Categories</th>
<th>n principals</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3</td>
<td>8</td>
<td>188.097</td>
<td>24.726</td>
</tr>
<tr>
<td>3 or More</td>
<td>9</td>
<td>192.362</td>
<td>23.526</td>
</tr>
</tbody>
</table>

Note. $n =$ sample size; $M =$ mean; $SD =$ standard deviation
Table 20

Independent t-Test Results Principal IC Score Based on Years Leading High-Needs School

<table>
<thead>
<tr>
<th>MHN-I vs. MHN-S EV assumed</th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>MD</th>
<th>SDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.098</td>
<td>0.758</td>
<td>-0.365</td>
<td>15</td>
<td></td>
<td>0.721</td>
<td>-4.266</td>
<td>11.707</td>
</tr>
<tr>
<td>EV not assumed</td>
<td>-0.363</td>
<td>14.553</td>
<td></td>
<td></td>
<td>0.722</td>
<td>-4.266</td>
<td>11.744</td>
</tr>
</tbody>
</table>

Note. EV = equal variances; F – f distribution; Sig. = significance level of Levene’s test; t = t statistic; df = degrees of freedom; Sig. (2-tailed) = t-test significance level; MD = mean difference; SDE = standard deviation error difference.

Results of the independent-samples t-test indicated the mean Principal IC score of principals with less than three years of experience in participating high-needs schools (M = 188.097; SD = 24.726) is less than the mean Principal IC score of principals with three or more years of experience in participating high-needs schools (M = 192.362; SD = 23.526). However, the difference in mean scores is not statistically significant, M = -4.266, 95% CI [-29.220, 20.688], t(15) = -0.364, p = .721. With these findings, the null hypothesis is accepted.

Hypothesis nine. H09: There is no significant relationship between a principal’s number of years in the role of principal at the elementary school and the school’s level of coherence.

In order to test the hypothesis, principals’ years of experience were grouped into five categories. The five categories of principal years of experience in the school being researched were less than three years, three years, four to six years, seven to nine years, and ten or more years. There were 17 of the 19 schools participating in the research study with a School IC and data regarding the principal’s years of experience thus meeting the requirements to be included in the data for correlational hypothesis testing (Table 7). There were eight principals with less than three years of experience; one principal with three years experience; three principals with four to six years experience; two principals with seven to nine years experience; and three
principals with 10 or more years of experience. The principal years of experience represented 17 respondents, and the School IC represented 401 respondents.

A Pearson’s product-moment correlation was used to test the hypothesis; however, the assumption of linearity was violated. Inspection of a scatterplot did not show a linear relationship between the School IC and the principal’s years of experience. As such, the nonparametric equivalent to the Pearson’s correlation, Kendall’s tau-b, was used. According to Laerd Statistics, (2016, p. 3), Kendall’s tau-b is appropriate to use when one or more assumptions of the parametric test are violated. Kendall’s tau-b measures the strength and direction of an association between two variables. In the case of the hypothesis, the two variables were School IC and principal’s years of experience.

The Kendall’s tau-b requires three assumptions. The first assumption requires continuous variables. The assumption was met as the dependent variable, principal’s years of experience, and the independent variable, School IC, are continuous. The second assumption is paired continuous variables. The assumption was met each observation included a principal’s years of experience variable paired with a School IC score from the same school. The third assumption is a monotonic relationship between the variables being tested. According to Laerd Statistics (2016, p. 3), the assumption is not strict, as the purpose of the test is to determine a monotonic relationship. Results of the Kendall’s tau-b are shared in Table 21.

Table 21

<table>
<thead>
<tr>
<th>IC Group</th>
<th>n schools</th>
<th>n responses</th>
<th>Corr. Coeff.</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Yrs</td>
<td>17</td>
<td>17</td>
<td>-.026</td>
<td>.895</td>
</tr>
<tr>
<td>School IC</td>
<td>17</td>
<td>401</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: n schools = sample size; n responses = total participants for each role group; Corr. Coeff. = Kendall’s tau-b Correlation Coefficient; Sig. (2-tailed) = Correlation significance level
Results of the Kendall’s tau-b correlation assessing the relationship between School IC and principals’ years of experience in 17 participating schools showed a small negative correlation. The correlation was not significant, \( \tau_b = -0.026, p = .895 \). With these findings, the null hypothesis is accepted. There is no significant relationship between the principal’s years of experience and School IC. The finding could suggest years of experience is not a key factor in implementing practices aligned with improving School IC.

**Hypothesis ten.** \( H_{010} \): There is no significant difference in the level of coherence in elementary schools with principals completing a traditional leadership training program and the level of coherence in elementary schools with principals participating in a non-traditional leadership training program.

The hypothesis could not be tested as all school principals fully participating in the research study attended traditional leadership training programs.

**Summary**

Chapter IV reviewed findings of statistical testing regarding levels of IC of the school, staff, and principals in MHN-I and MHN-S schools. Statistical testing revealed a significant difference in the levels of School IC for matched pairs of MHN-I and MHN-S schools suggesting the suitability of a focus on IC for further research and school improvement efforts in Mississippi high-poverty elementary schools. Regarding the relationship between School IC and school performance, the research found no statistically significant relationship; however, the levels of IC were more closely related to QDI score differences than to SPL points differences. Another set of hypotheses considered the differences and relationships between principal and staff levels of IC in their respective schools finding mean IC levels of the principal and staff in MHN-I schools were similar and not statistically significantly different. The relationship
between the Principal IC and Staff IC in MHN-I schools was significant. In MHN-S schools, Principal IC and Staff IC differences were approaching statistical significance, and the relationship between the two was not statistically significant. Final hypotheses considered the differences and relationships between principals’ years of experience leading researched schools and School IC levels finding no significant difference or relationship.

Chapter V includes conclusions from statistical testing, implications for findings regarding support of high-poverty schools in Mississippi and recommendations for additional research to extend understanding and application of research findings.
CHAPTER V
SUMMARY, CONCLUSIONS, IMPLICATIONS, AND FUTURE RESEARCH
RECOMMENDATIONS

Chapter V presents a summary of the study design, the research participants, the research survey instrument, and the results of data analysis presented in Chapter 4. The chapter also contains discussion of research findings, possible implications, and recommendations for future research.

Research Summary

The purpose of this survey-informed quantitative research study was to compare the capacity for improvement in Mississippi high-needs improving and struggling elementary schools to determine if a significant difference exists in the capacity for improvement between the two school types. Elmore et al. (2014) contend levels of internal coherence (IC) present in a school determine the school’s capacity for improvement, therefore, the study compared the levels of IC in matched pairs of elementary schools in order to determine if there was a significant difference in the level of IC in Mississippi High-needs Improving schools (MHN-I) and Mississippi High-needs Struggling (MHN-S) schools. Participating schools completed the Internal Coherence Survey (IC Survey) assessing the schools’ capacity for improvement through examination of the perceptions of teachers and school administrators regarding the levels of IC in their respective schools.
Additionally, the researcher was interested in differences between levels of IC and school performance in order to determine if a significant difference exists between levels of IC and school performance in MHN-I schools and MHN-S schools. The researcher considered correlations between school performance and School IC as well to determine if a linear relationship exists between MHN-I schools and School IC and between MHN-S schools and School IC. A finding showing a moderate to strong relationship between school performance and IC could provide further evidence of the usefulness of focusing on coherence-building as an improvement strategy.

Further interest of the researcher included determining any differences between the IC levels of the school staff and principal. A finding showing significant differences could indicate the gap between what an IC-aware principal knows regarding the current level of practice in coherence-focused improvement practices and what the staff understands. Knowing the gap, could inform a principal regarding strategies to build the staff’s capacity in attaining higher levels of IC. Additionally, the researcher considered correlation between the principal’s and staff’s perceptions of levels of IC in order to consider a potential linear relationship between the two. If data show a strong positive or negative relationship, the data inform IC-focused improvement strategies.

Given the research findings related to a school leader’s impact to student achievement, particularly in high-poverty schools (The Wallace Foundation, 2010; Leithwood et al., 2004; Waters et al., 2003; Branch et al., 2013), the researcher was interested in testing differences in School IC based on principal’s years of experience in the researched school rather than years of experience all together. Findings of any significant differences potentially inform district leaders and state policy makers with regard to the necessary tenure of an IC-aware principal in an
MHN-S school. Likewise, correlations between levels of IC and principals’ years of experience in MHN-I and MHN-S schools were considered to determine linearity as well as the strength and direction of the relationship.

Finally, the principal’s leadership training type was investigated. The researcher was interested in any significant differences in the levels of IC in schools of principals who received leadership training in a traditional training format and a non-traditional training format. Clarification of the two training types is addressed Chapter I Definition of Terms. Information in the chapter will discuss findings and implications of the research as well as recommendations for future research.

**Research design.** The research sample for the study was selected from the population of high-needs elementary schools in Mississippi having five years of statewide testing data since 2011-2012 school year (SY) using data from the 2010-2011 SY as baseline data to calculate gains or losses. The total population of high-needs schools, defined as 40 percent of more of the student population qualifying for free- and reduced-price lunch, included 327 elementary schools. The research sample attempted to targeted 10 percent of the total population, 34 schools and 17 matched pairs of schools. Matched pairs included one improving school and one struggling school identified as such based on school performance data from the 2011-2012 SY to the 2015-2016 SY. The final number of schools electing to participate in the research included 19. Of the 19 schools, seven matched pair were created based on matching criteria including baseline student achievement level, size of school, and comparable poverty-level grouping. Three hypotheses – $H_{01}$, $H_{04}$, and $H_{05}$ – utilized the seven matched pair of schools, 14 total schools. The remaining hypotheses utilized data from some or all nineteen schools. Detail regarding the number of schools tested for each hypothesis is included in Chapter IV.
**Survey instrument.** Participating schools’ staff completed the Internal Coherence (IC) Survey consisting of 50 Likert-response items reflecting factors associated with Internal Coherence. The IC Survey items were organized into three domains shown in Table 5. The Cronbach’s alpha coefficient for each domain ranged from .907 to .960 with an overall survey instrument alpha coefficient of .975 indicating the strength of the internal consistency of the instrument is excellent. Cronbach’s alpha was calculated based on 19 participating schools with a total of 398 IC Survey responses. Each participant’s total IC Survey score was calculated based on responses to Likert-type items ranging in value from zero to five with a total possible score of 250. Three categories of IC scores were calculated including Staff IC (average of all staff IC scores excluding the principal), Principal IC (the principal’s IC score), and School IC (average of all participants’ IC scores in each school including all staff and the principal).

**School performance measure.** In order to establish the suitability of a school performance measure to assess the impact of IC to performance, two measures were considered and statistically assessed. The first was the net increase or decrease in the Quality of Distribution Index (QDI) scores over three years of school accountability data (SY 2011-2012, SY 2012-2013, and SY 2013-2014). The second measure was the School Performance Level (SPL) points change over two years of school accountability data (SY 2014-2015 and SY 2015-2016). MHN-I schools had a net increase in both performance measures. MHN-S had a net decrease or no change in both performance measures. Both school performance measures were statistically assessed using an independent samples t-test to determine if a significant difference existed in the means of MHN-I and MHN-S schools on each measure. Results of significance testing revealed a statistically significant mean difference in the QDI score net increase or decrease ($p = .013$) and SPL points change ($p = .000$) of MHN-I and MHN-S schools. See
Tables 8 through 11 in Chapter 4 for details of statistical testing. Both school performance measures were used in statistical testing of applicable hypotheses.

**Hypotheses and statistical tests.** Ten hypotheses were included in the research project. Independent variables (IV) included School Performance, School IC, Staff IC, Principal IC, Principal Years in School, and Principal Traditional/Non-traditional Training. Dependent variables (DV) included School IC and School Performance. Statistical tests conducted included paired-samples $t$-test for the first and primary hypothesis regarding the difference between the IC levels in MHN-I schools and MHN-S schools. Paired-samples $t$-tests were also used to assess the difference between principal and staff IC scores in participating MHN-I and MHN-S schools. Other statistical tests utilized included Kendall’s tau-b, the Independent-samples $t$-test, and Pearson’s correlation (see Table 6 in Chapter 4). Nine of the ten hypotheses below were assessed. The tenth hypothesis could not be assessed as data were insufficient for testing.

**Summary of Findings**

**Hypothesis one.** The first and foundational null hypothesis in the research study predicted there was no significant difference in the level of coherence in matched pairs of MHN-I and MHN-S elementary schools. Stated in a comparable manner, the hypothesis predicted no difference in the capacity for improvement in MHN-I schools and MHN-S schools. Seven matched pairs of schools, 14 total schools, were included in the hypothesis testing. Schools were matched based on baseline QDI scores, size of school, and comparable poverty levels. Data were analyzed using a Paired-samples $t$-test in SPSS (version 23) and included school performance as the dependent variable and School IC as the independent variable. Assumption testing was completed prior to conducting the statistical test and is described in Chapter IV. Results revealed the mean School IC of MHN-I schools ($M = 206.289$, $SD = 18.087$) was higher.
than the mean School IC of MHN-S schools ($M = 181.102, SD = 12.055$). The difference in the levels of IC, or capacity for improvement between MHN-I schools and MHN-S schools is a statistically significant mean difference of $25.188$ (95% CI, 5.712 to 44.664), $t(6) = 3.165$, $p = .019$, $d = 1.196$. The hypothesis testing reached significance at the .05 level. The findings suggest evidence to consider the value of focusing on implementing practice to increase levels of IC as a viable improvement strategy for Mississippi high-needs schools. Further discussion regarding conclusions and implications for the findings are discussed later in the chapter.

**Hypotheses two and three.** Null hypotheses two and three predicted no significant relationship between school performance and levels of IC in MHN-I and MHN-S schools. Considering the hypotheses in a comparable manner, the hypotheses predicted no linear relationship between School IC and school performance. There were 10 MHN-I schools and seven MHN-S schools included in the testing. Both hypotheses were tested for both QDI score difference and SLP points change using a Kendall’s tau-b correlation test. Results of the Kendall’s tau-b correlation showed a moderate positive correlation between both school performance measures and levels of School IC in MHN-I schools (QDI difference: $\tau_b = .289$, $p = .245$; SLP difference: $\tau_b = .200$, $p = .421$). In MHN-S schools, statistical testing results revealed a moderate negative correlation between both school performance measures and School IC (QDI score difference: $\tau_b = -.390$, $p = .224$; SPL points difference: $\tau_b = -.143$, $p = .652$). Neither of the hypotheses results reached significance at the .05 level; however, an important finding to note includes the moderate positive relationship between School IC and school performance in MHN-I schools and the moderate negative relationship between School IC and school performance in MHN-S schools. The findings could indicate as schools improve, levels of IC improve as well, and conversely, as schools fail to improve, levels of IC fail to improve.
An interesting and indirect additional finding from the results of hypotheses two and three testing is worth noting. The correlation between MHN-I schools’ School IC and QDI score difference \((p = .245)\) was substantially higher than the correlations between School IC and SLP points difference \((p = .421)\). Likewise, the correlation between MHN-S schools’ School IC and QDI score difference \((p = .225)\) was substantially higher than the correlation between School IC and SLP points difference \((p = .652)\). The difference could indicate more research is needed to test the usefulness or accuracy of the two different scales in assessing school performance levels.

In order for schools to clearly determine progress and improvement longitudinally, the measures are not useful if not more closely aligned. The misalignment is problematic in assessing the success or failure of continuous improvement efforts.

**Hypotheses four and five.** Null hypotheses four and five predicted no significant difference between the principal’s perceived level of IC and the staff’s level of IC in MHN-I and MHN-S schools. Stated in a comparable manner, the hypotheses predicted no difference in the perceptions of the principal and the staff regarding the school’s capacity for improvement in either improving or struggling schools. A paired-samples \(t\)-test was used to assess each hypothesis. There were 10 MHN-I and seven MHN-S schools having both a Principal IC score and a Staff IC score and thus eligible for inclusion in hypotheses testing. Results showed the mean IC levels of principals \((M = 197.799, SD = 23.735)\) and staff \((M = 196.735, SD = 28.082)\) in MHN-I schools were closely aligned and, as a result, no significant difference existed between the two \((p = .868)\). Conversely, in MHN-S schools, the difference in mean IC levels of principals \((M = 200.429, SD = 26.476)\) and staff \((M = 179.886, SD = 13.198)\) were approaching significance at the .05 level \((p = .150)\). The results suggest principal and staff perceptions of the capacity for improvement are more closely aligned in MHN-I schools than in MHN-S schools.
Hypotheses six and seven. Null hypotheses six and seven were correlational hypotheses predicting no significant relationship between the principal’s perceived level of IC and the staff’s perceived level of IC in MHN-I and MHN-S schools. Stated in a comparable manner, the hypotheses predicted no association between the principal and the staff’s perceptions regarding the capacity of school to improve in either improving schools or struggling schools. There were 10 MHN-I schools and seven MHN-S schools included in the hypotheses testing. Results of a Pearson’s correlation showed the correlation between Staff IC scores and Principal IC scores in MHN-I schools significant at the .01 level, \( r = .775, p = .008 \), a strong positive correlation.

Conversely, results of the Kendall’s tau-b correlation assessing the relationship between Staff IC and Principal IC scores in MHN-S schools showed a moderate negative correlation between the perception of the principal’s level of IC and the staff’s level of IC; however, the correlation was not significant at the .05 level, \( \tau_b = -.333, p = .293 \).

In MHN-I schools, results suggest as the principal’s perception of IC levels, or the school’s capacity for improvement increase, the staff’s perceptions of IC levels and the school’s capacity for improvement increase as well. Conversely, in MHN-S schools, results of statistical testing suggest as the principal’s perception of IC levels, or the school’s capacity for improvement decrease, the staff’s perceptions decrease as well.

Hypothesis eight. Null hypothesis eight was related to the years of experience principals had in leading their high-needs schools and their school’s level of IC. The hypothesis predicted no significant difference in School IC levels for the eight principals with less than three years leading the researched school compared to nine principals with three or more years of leadership in the researched school. Results of the independent-samples \( t \)-test revealed the mean Principal IC score of principals with less than three years of experience in the researched school (\( M = \)
188.097; $SD = 24.726$) is lower than the mean Principal IC score of principals with three or more years of experience in the researched school ($M = 192.362; SD = 23.526$). However, the difference is not statistically significant, $M = -4.266, 95\% CI [-29.220, 20.688]$, $t(15) = -.364, p = .721$. The results are not significant at the .05 level. The results could suggest years of experience are not a factor in bringing about improvements in levels of IC in high-needs schools. More discussion of conclusions and implications are detailed later in the chapter.

**Hypothesis nine.** Null hypothesis nine predicted no significant relationship between the principal’s number of years leading the researched high-poverty school and School IC. Years of experience for the 17 schools included in hypothesis testing were grouped into five categories including less than three, three, four to six, seven to nine, and ten or more. The Spearman’s rank-order correlation showed a small negative correlation, $r = -.033, p = .901$. The correlation was not significant at the .05 level. The finding suggests years of experience may not be a factor in a principal’s understanding and capacity to implement strategies associated with bringing about high levels of IC in their respective schools.

**Hypothesis 10.** Null hypothesis 10 predicted no significant difference in the level of School IC in researched high-poverty elementary schools with principals completing traditional leadership training and principals participating in non-traditional leadership training program. The hypothesis could not be tested as all school principals participating in the research study attended traditional leadership training programs.

**Conclusions and Implications**

The researcher was interested in data useful in informing policy and support of high-needs/high-poverty schools in need of improvement. Results of hypothesis one indicating a significant difference in the levels of Internal Coherence in Mississippi high-needs improving
and struggling schools suggests the viability of a focus on increasing coherence as a useful improvement framework for high-poverty schools. According to Forman, Stosich, and Bocala (2017), “Internal coherence requires educators to work in concert to assess their current status, identify existing problems of practice, commit to the implementation of a collective solution and the new learning this entails, reflect on the impact of their effort, and return to the next cycle of joint learning” (p. 3). Results of the research indicate high-needs schools showing continual improvement in student achievement and school performance results (MHN-I schools) have significantly higher levels of internal coherence than struggling schools.

Null hypotheses two and three predicted no relationship between levels of School IC and school performance in MHN-I and MHN-S schools. While the findings were not significant, findings did show a moderate positive relationship between IC and school performance in MHN-I schools and a moderate negative relationship in MHN-S schools. The results offer additional evidence for the usefulness of a focus on increasing IC as a strategy for improvement. As IC increases, performance increases, and as performance stalls or decreases, there is a corresponding decrease in coherence.

Results of hypotheses four and five strengthen the evidence for focus on increasing IC as an improvement strategy. Specifically, the results indicate little difference between the perceptions of principals and staff in the levels of IC in MHN-I schools – quite different from the two role perceptions in MHN-S schools. In MHN-S schools, the difference in principal and staff perceptions was approaching significance. The results suggest as coherence perceptions of leadership and staff converge and align, student achievement and school performance improve.

Hypotheses six and seven offer additional evidence to support the merits of IC focus in that the significance level of the correlation between MHN-I Principal IC and Staff IC (r = .775,
The correlation of Principal IC and Staff IC in MHN-S schools was moderate, negative, and not statistically significant ($r = -.333, p = .293$). Both results are evidence of the merits of focusing on IC as an improvement strategy. If the principal and staff perceive higher levels of IC and the school is improving, the indication is personnel recognize engagement in strategies related to improving IC including collaboration, focus on instruction, and analyzing data. The results of a moderate negative correlation between principal and staff perceptions of IC in MHN-S schools is an indication neither group perceives the school is focusing on necessary strategies to increase coherence and thus performance.

Connecting the results the aforementioned research hypotheses to the literature regarding IC is relevant. Elmore et al. (2014) define internal coherence as “...a school’s capacity to engage in deliberate improvements in instructional practice and student learning across classrooms, over time...” (p. 3). The authors explain coherence is achieved through a cycle of working together, assessing impact, refining strategies, and making adjustments as data are gathered and analyzed. Results of hypotheses six and seven support provide further evidence in support of the authors’ statements of Elmore et al. (2014).

Hypotheses eight and nine were related to principals’ years of experience leading the researched schools. Hypothesis eight predicted no difference in School IC for principals with less than three and principals with three or more years leading the researched school. Hypothesis nine predicted no relationship in School IC and principals’ years of experience. Results for $H_{08}$ showed principals with three or more years of experience leading their high-poverty schools perceived their schools’ IC levels were higher ($M = 192.362; SD = 23.526$) than those of principals with less than three years of experience ($M = 188.097; SD = 24.726$). The mean
difference was not statistically significant ($p = .721$); however, the higher mean of Principal IC for principals with three or more years of experience in their schools could indicate the principals have a higher level of confidence the staff are engaging in activities and strategies associated with increasing IC than do principals with fewer years of experience leading their high-poverty schools. Results might also indicate principals with more experience in their schools are farther along in implementing effective coherence-building strategies and the experience has increased their knowledge and understanding of authentic implementation of coherence-building strategies.

For hypothesis nine, the correlation between years of experience leading the researched school and levels of School IC was not significant, $r = -.033, p = .901$. In fact, the correlation approaches zero indicating there is almost no correlation. Both sets of results could suggest years of experience or time to implement practices related to increasing IC are not factors of importance when considering a focus on increasing IC as an improvement strategy. Perhaps principals new to leadership in high-needs schools could effectively learn how to lead implementation of strategies to bring about coherence if they are IC-aware and understand the ultimate goal of the strategies they are implementing long enough to persevere through the barriers encountered in high-needs schools.

The question regarding years of experience leading a high-needs school and the association to levels of IC is one requiring more investigation. The research could be expanded to consider additional years of experience, not simply the number of years in the high-needs school researched. In addition, the principal’s knowledge and explicit focus on coherence-building activities could be more of a factor in increasing coherence than actual years of experience. More research is needed to understand the factors associated with bringing about higher levels of IC.
The findings of the research study support the use of a School IC focus as a strategy for continual improvement. Findings include:

- statistically significant differences ($p = .019$) in the mean School IC scores of MHN-I ($M = 206.289, SD = 18.087$) and MHN-S ($M = 181.102, SD = 12.055$) schools ($H_{01}$);
- moderate positive correlations, not statistically significant (QDI difference: $\tau_b = .289, p = .245$; SLP difference: $\tau_b = .200, p = .421$), between MHN-I school performance and School IC ($H_{02}$);
- moderate negative correlations, not statistically significant (QDI score difference: $\tau_b = -.390, p = .224$; SPL points difference: $\tau_b = -.143, p = .652$), between MHN-S school performance and School IC ($H_{03}$);
- non-statistically significant differences ($p = .868$) in Principal IC ($M = 197.799, SD = 23.735$) and Staff IC ($M = 196.735, SD = 28.082$) in MHN-I schools ($H_{04}$);
- approaching statistically significant differences ($p = .150$) between Principal IC ($M = 200.429, SD = 26.476$) and Staff IC ($M = 179.886, SD = 13.198$) in MHN-S school ($H_{05}$);
- statistically significant correlation ($r = .775, p = .008$) between Principal IC and Staff IC in MHN-I schools ($H_{06}$);
- non-statistically significant correlations ($\tau_b = -.333, p = .293$) between Principal IC and Staff IC in MHN-S schools ($H_{07}$);
- non-statistically significant differences ($p = .721$) in School IC for principals with less than three years ($M = 188.097; SD = 24.726$) verses three or more years of experience ($M = 192.362; SD = 23.526$) leading their schools ($H_{08}$);
non-statistically significant correlation \((r = -0.033, p = .901)\) between School IC and principals’ years of experience leading their high-poverty schools for principals with less than three, three, four to six, seven to nine, or 10 or more years \(\left( H_{09} \right)\);

insufficient data to assess the difference in the level of School IC in researched high-poverty elementary schools with principals completing a traditional leadership training and principals participating in a non-traditional leadership training program \(\left( H_{010} \right)\).

The Internal Coherence Survey (Elmore et al., 2014) measures the extent to which individuals in schools perceive they are engaging in effective practices for school improvement. The practices are grouped into the categories of leadership for instruction improvement, organizational process and teams, and teacher efficacy. The related Instructional Coherence Framework is a model for guiding school leaders to engage in practices related to improving organizational learning resulting in improved student and school outcomes (Forman et al., 2017). The results of the research on internal coherence in MHN-I and MHN-S schools confirm the appropriateness of utilizing a focus on building internal coherence as an improvement strategy. The findings suggest the potential to improve and increase a school’s capacity for improvement in Mississippi high-needs schools and thus impact the trajectory of performance in such schools.

**Recommendations for Future Research**

Educational literature and research provide a wealth of information and data regarding evidence-based practices for instruction, leadership, and improving schools, yet Mississippi continues to rank at or near the bottom of states across the United States on student achievement measures (Annie E. Casey Foundation, 2016). In addition, the concern of Mississippi school poverty levels adds complexity to school improvement challenges. The research question was
focused on determining the capacity of Mississippi high-needs elementary schools to attain sustainable and continuous improvement in order to potentially isolate practices to increase the capacity for improvement in all Mississippi high-needs schools. Elmore et al. (2014) contend levels of internal coherence present in schools determine a school’s capacity for improvement; therefore, the study utilized the Internal Coherence Survey instrument to measure and compare the levels of internal coherence in matched pairs of MHN-I and MHN-S elementary schools.

Findings of statistically significant differences in the levels of School IC in MHN-I and MHN-S elementary schools confirm leaders in improving high-needs schools are either knowingly or unconsciously focused on implementing practices to bring about improved internal coherence, or the capacity for improvement, among staff.

Future research recommendations include expanding the research to all high-needs schools in Mississippi to include all grade ranges. Doing so could determine if findings of the research based on elementary schools are consistent across grade spans. Also, a question of whether or not the size of the school is a factor in levels of coherence is important to understand. Research should include deliberate selection of schools considered as large, medium, and small as the size of the school may be a factor in implementing coherence-building strategies. Also, the distinction of rural or urban schools could be a factor to consider regarding level of coherence. Schools in large school systems verses smaller school systems could potentially answer questions related to the amount or availability of support needed for improvement of schools based on coherence-building.

In addition, the researcher recommends qualitative studies of MHN-I and MHN-S schools to reveal explanatory information to extend understanding of how leaders in improving schools go about building coherence or what the barriers to building coherence are in struggling
schools. Qualitative research should include components of the complete Internal Coherence Protocol developed by Elmore et al. (2014) which includes interviews, observations, and focus groups to develop a deeper understanding of practices inside schools contributing to building or preventing development of coherence.

For the purpose of the research study, the researcher focused on identifying improving and struggling schools based on a school performance scores over time. Two measures were used to determine school performance including the QDI score net gain or loss and the SPL net positive or negative points change. Improving schools achieved a net gain in QDI scores and a positive SPL points change over multiple years of school performance data. Struggling schools had a net loss in QDI scores and net negative SPL points change over the same number of years. The total increase or decrease in points (QDI difference and SPL difference) was used as a measure for school performance in applicable hypotheses. An alternative measure to use in furthering the research could be the actual SPL points total for schools considered high-performing, high-needs schools and those considered low-performing, high-needs schools. Mississippi’s school performance labels of A to F could be used to distinguish between high-performing and low-performing high-needs schools. The use of actual SPL points could offer a different perspective on any potential differences in coherence levels in researched schools.

Future research could inform the development of timelines, practices, and protocols to assist school leaders in building coherence in their schools. According to Fullan and Quinn (2016), “What we need is a framework that can guide action and that is comprehensive but not unwieldy – something that works and that can be mastered by any leader or group that puts in the time to learn how the main elements fit in their own situation” (p. 11). For instance, can a technical assistance provider assess the baseline capacity for improvement for a struggling
school? Could the baseline assessment provide information for the most useful entry point to work toward building the capacity for improvement? Can the progress of a school in their journey toward building coherence be a predictor for how long it will take the school to reach the next stage of improvement? Can we predict school performance tied to levels of IC and provide information to policy-makers and district authorities regarding whether the school in on-track, ahead of, or behind in their improvement timeline? Can we determine what supports are needed to assist schools in moving to the next level of capacity for improvement based on the level of their current IC practices? Can we determine if some components of IC-building strategies are more correlated with increasing improvement capacity than others? Could we develop a protocol to guide Mississippi high-poverty struggling schools in a coherence-building improvement strategy? Fullan and Quinn (2016) suggest a school improvement framework based on coherence. Future suggested research includes pilot projects implementing the framework and tracking longitudinal school performance and IC levels. In addition, university programs targeting preparation of school turnaround/school improvement leadership based on an internal coherence framework comprised of courses and action research developed to address implementation of the components could potentially prepare a cadre of school improvement leadership experts equipped, prepared, and efficacious regarding school turnaround.

Findings of the research confirm focusing on IC as a framework for improvement positively impacting the state of school improvement in Mississippi by informing policy, practice, training, and support of school leadership and potentially impacting the trajectory of school improvement in the state. A focus on practices to build coherence, according to Forman et al. (2017), place school improvement strategies within the context of the fact that adult learning in a school in need of improvement is critically important. According to the authors,
simply studying characteristics of a high performing, high-poverty school is not sufficient to help personnel replicate the characteristics. Rather, improvement is incremental and developmental with teachers and leaders learning how to engage in effective practices over time. The framework of focusing on building internal coherence is a framework focused on adult learning. The notion goes back to Elmore’s (2008b) statement, “If schools are not meeting expectations for student learning, it is largely because they do not know what to do. Given the longstanding disconnect between policy and practice, neither do policymakers” (p. 217). Findings of the research provide evidence of the necessity for pursuing a school improvement strategy focused on adult learning through engaging in practices to build internal coherence in Mississippi’s high-needs struggling schools. The improvement strategy has the capacity to change the local and national narrative regarding the state of school improvement in Mississippi.

In closing, the researcher began with a call from the Effective Schools Researchers challenging all educators to act on evidence of all children’s educability. The statement by Ron Edmonds (1979) is a fitting conclusion to yet another research endeavor confirming the evidence.

… how many effective schools would you have to see to be persuaded of the educability of poor children? If your answer is more than one, then I submit that you have reasons of your own for preferring to believe that basic pupil performance derives from family background instead of school response to family background. Second, whether or not we will ever effectively teach the children of the poor is probably far more a matter of politics than of social science, and that is as it should be. (pp. 22-23)
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APPENDIX
APPENDIX A

SERP Internal Coherence Survey

Developed by Richard F. Elmore, Michelle L. Forman, and Elizabeth L. Stosich (2016)

By checking the box below, I acknowledge that I have read the summary above. The use of my responses has been explained to my full satisfaction, and I acknowledge that I may print this page for my records.

☒ The purposes of this research have been satisfactorily explained to me.

By checking the box below, I agree to release my anonymous responses to researchers at the Strategic Education Research Partnership to contribute to the larger study of Internal Coherence for future research and publication.

☒ Yes, I agree to allow my survey responses to be used for future research and publication.
☒ No, do not agree to allow my survey responses to be used for future research and publication.

Please indicate the school in which you work. __________________________

Questions for Principals Only

I have been serving as a principal in this school for: ___ Less than three years ___ Three full years or more

Please select the number of years you have served as principal in this school if more than three: ___ Four to six ___ Seven to nine ___ Ten or more

Please indicate the type of leadership program completed: ___ Traditional Leadership Training (University classes including all on-site classes or a combination of on-site and on-line classes) ___ Non-traditional Leadership Training (Training other than traditional including a fully on-line program or training provided through an alternative route to certification as in the Mississippi Alternate Path to Quality School Leadership Program – MAPQS) ___ Other Type of Leadership Training Program – Please Describe __________________________________________

| Domain I: Leadership for Instructional Improvement |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Factor 1: Leadership for Learning |

Please indicate how accurately each of the following statements describe your principal based on your experiences in your school this school year.

<table>
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<tr>
<th></th>
<th>Highly Inaccurate</th>
<th>Inaccurate 1</th>
<th>Somewhat Inaccurate 2</th>
<th>Somewhat Accurate 3</th>
<th>Accurate 4</th>
<th>Highly Accurate 5</th>
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<tbody>
<tr>
<td>1. The principal invites input</td>
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from faculty in discussions about teaching and learning.

2. The principal asks probing questions about teaching and learning.

3. The principal listens attentively.

4. The principal at this school encourages multiple points of view.

5. The principal acknowledges his / her own limitations with respect to knowledge or expertise.

6. The principal is knowledgeable about effective instructional practices.

7. The principal communicates a clear vision for teaching and learning at our school.

8. The principal is directly involved in helping teachers address
Factor 2: Psychological Safety

Please indicate how accurately the following statements describe your experiences at your school this school year.

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<tr>
<th>Statement</th>
<th>Highly Inaccurate</th>
<th>Inaccurate</th>
<th>Somewhat Inaccurate</th>
<th>Somewhat Accurate</th>
<th>Accurate</th>
<th>Highly Accurate</th>
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<tr>
<td>9. People in this school are eager to share information about what does and does not work.</td>
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<td>10. Making mistakes is considered part of the learning process in our school.</td>
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<td>11. If I make a mistake at this school, it will not be held against me.</td>
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<td>12. In this school, teachers feel comfortable experimenting with untried teaching approaches, even if they may not work.</td>
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<td>13. In this school, it is easy to speak up about what is on your mind.</td>
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<td>14. People in this school are</td>
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usually comfortable talking about problems and disagreements about teaching and learning.

### Factor 3: Professional Development

Please indicate how accurately the following statements describe your professional development experiences on your campus this school year.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Highly Inaccurate (0)</th>
<th>Inaccurate (1)</th>
<th>Somewhat Inaccurate (2)</th>
<th>Somewhat Accurate (3)</th>
<th>Accurate (4)</th>
<th>Highly Accurate (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. My professional development experiences this year have been closely connected to my school’s improvement plan.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>16. My professional development experiences this year have included enough time to think carefully about, try, and evaluate new ideas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. My professional development experiences this year have been valuable to my practice as a teacher.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

161
18. My professional development experiences this year have been designed in response to the learning needs of the faculty, as they emerge.

19. My professional development experiences this year have included follow-up support as we implement what we have learned.

Domain II: Whole School Processes for Instructional Improvement
Factor 1: Collaboration Around an Improvement Strategy

Please indicate how accurately the following statements describe your experiences at your school this school year.

<table>
<thead>
<tr>
<th></th>
<th>Highly Inaccurate 0</th>
<th>Inaccurate 1</th>
<th>Somewhat Inaccurate 2</th>
<th>Somewhat Accurate 3</th>
<th>Accurate 4</th>
<th>Highly Accurate 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Our school has an improvement plan of which we are all aware.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>21. We focus our whole-school improvement efforts on clear, concrete steps.</td>
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<td></td>
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</tr>
<tr>
<td>22. We coordinate curriculum,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
instruction and learning materials with our school improvement plan.

23. The programs or initiatives we implement connect clearly to our school improvement plan.

<table>
<thead>
<tr>
<th>Factor 2: Teachers’ Involvement in Instructional Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate how accurately the following statements describe teachers' work at your school this school year.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Highly Inaccurate 0</th>
<th>Inaccurate 1</th>
<th>Somewhat Inaccurate 2</th>
<th>Somewhat Accurate 3</th>
<th>Accurate 4</th>
<th>Highly Accurate 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Teachers work collectively to plan school improvement.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>25. Teachers work collectively to select instructional methods and activities.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
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<td>[ ]</td>
</tr>
<tr>
<td>26. Teachers work collectively to evaluate curriculum and programs.</td>
<td>Note: This item was inadvertently omitted from the on-line survey. Cronbach’s Alpha was calculated on remaining items. See Table</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>27. Teachers work collectively to determine professional development</td>
<td>[ ]</td>
<td>[ ]</td>
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<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
28. Teachers work collectively to plan professional development activities.

29. As a full faculty, we work toward developing a shared understanding of effective instructional practices.

30. As a full faculty, we regularly revisit and revise our thinking about the most effective instructional practices we can use with our students.

Do you participate in grade-level or content-area team?

31. Please select all that apply:

- grade-level team
- content-area team
- other (Please describe.) ______________

○ I do not participate in a teacher team. (Skip to the end of the survey.)

If you participate in more than one team, please choose one team on which to base your answers to all of the following items.

Domain III: Teachers’ Efficacy Beliefs

Factor 1: Collective Efficacy

Please indicate how accurately the following statements describe the teachers in your school this school year.
<table>
<thead>
<tr>
<th></th>
<th>Highly Inaccurate 0</th>
<th>Inaccurate 1</th>
<th>Somewhat Inaccurate 2</th>
<th>Somewhat Accurate 3</th>
<th>Accurate 4</th>
<th>Highly Accurate 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. Teachers are confident they will be able to motivate their students.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>33. Teachers have the skills needed to produce meaningful student learning.</td>
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</tr>
<tr>
<td>34. If a child doesn’t learn something the first time, teachers will try another way.</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>35. Teachers believe that every child can learn.</td>
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</tr>
<tr>
<td>36. Teachers are skilled in various methods of teaching.</td>
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</tr>
<tr>
<td>37. Teachers have what it takes to explore new instructional approaches to help underperforming students meet standards.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Domain IV: Teams as Levers for Instructional Improvement

Factor 1: Teams’ Shared Understanding of Effective Practice
<table>
<thead>
<tr>
<th>Question</th>
<th>Almost Never</th>
<th>2-3 Times a Year</th>
<th>About Once a Month</th>
<th>2-3 Times a Month</th>
<th>Once a Week</th>
<th>More Than Once a Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>38. How often have you worked with members of your team to discuss teaching decisions based on student work?</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>39. How often have you worked with members of your team to discuss teaching decisions based on student assessment data?</td>
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<td></td>
</tr>
<tr>
<td>40. How often have you worked with members of your team to evaluate curricular or assessment materials?</td>
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</tr>
<tr>
<td>41. How often have you worked with members of your team to discuss lesson plans or</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
specific instructional practices?

Factor 2: Support for Team

Please indicate how accurately the following statements describes the principal in your school this school year.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Highly Inaccurate (0)</th>
<th>Inaccurate (1)</th>
<th>Somewhat Inaccurate (2)</th>
<th>Somewhat Accurate (3)</th>
<th>Accurate (4)</th>
<th>Highly Accurate (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>42. The principal provides teacher teams with the right balance of direction and independence.</td>
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</tr>
<tr>
<td>43. The principal gives teacher teams a clear and meaningful purpose for their time together.</td>
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<tr>
<td>44. The principal provides adequate time for teacher teams to meet.</td>
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<tr>
<td>45. The principal ensures that teacher meeting time is protected and maintained consistently throughout the year.</td>
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</tr>
<tr>
<td>46. The principal at this school supports teacher teams in following</td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
through on instructional decisions made by the group.

Factor 3: Team Processes
Please indicate the response that best reflects your experience on your team this school year.

<table>
<thead>
<tr>
<th></th>
<th>Highly Inaccurate 0</th>
<th>Inaccurate 1</th>
<th>Somewhat Inaccurate 2</th>
<th>Somewhat Accurate 3</th>
<th>Accurate 4</th>
<th>Highly Accurate 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>47. Our team meetings have an agenda, which we do our best to follow.</td>
<td></td>
<td></td>
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<tr>
<td>48. There is always someone who has the responsibility of guiding or facilitating our team discussions.</td>
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</tr>
<tr>
<td>49. When our team makes a decision, all teachers on the team take responsibility for following through.</td>
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</tr>
<tr>
<td>50. Our team meetings include productive debate.</td>
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</tr>
<tr>
<td>51. All members of the team are actively involved in our collective learning.</td>
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</tr>
</tbody>
</table>
52. Team meetings connect to each other and the overarching purpose for teamwork.
VITA

Paula W. Tharp

Education

Ph.D., Educational Leadership, University of Mississippi 2017
Dissertation Title: Improvement Capacity in MS Schools: A Comparison Between High Needs Improving and Struggling Schools
Dissertation Committee: Dennis A. Bunch, Ed.D. (Chair and Advisor); Douglas R. Davis, Ph.D.; RoSusan D. Bartee, Ph.D.; Marie Barnard, Ph.D.; Lawrence W. Lezotte, Ph.D. (External Committee Member, Michigan State University, Grand Canyon University)

Educational Leadership Certification 1990
Delta State University, Cleveland, MS

M. Ed., Elementary Education, Delta State University 1986
Cleveland, MS

B.S.E., Elementary Education, Delta State University 1985
Cleveland, MS

Research Interests

Continual school improvement in high-poverty student populations
Leadership skills and strategies for school turnaround leadership
Effective strategies to build a culture of sustainable improvement
Common barriers to successful school improvement and strategies to overcome barriers
Strategies and procedures to build capacity in local faculty and administration for self-sustaining school improvement
Identification of standard phases experienced in the process of improvement to determine recognizable characteristics of phases and inform action steps
Specific and explicit professional training and coaching of school administrators specific to unique needs of schools in need of substantial improvement

Professional Interests

Contribute to improvement of educational services for children in high-poverty Mississippi schools through a meaningful research agenda leading to the development of a comprehensive and practical program including training, resources, and support targeting the specific needs of
school turnaround leadership

**Professional Credentials**

*Principal, Highland Elementary School, Madison County Schools, Madison, MS 2014 – Present*

Accomplishments: Implementing improvement efforts resulting in increase in school performance level from a baseline of “C” on MCT2 in 2013-2014 to a “C” on the PARCC assessment measuring increased expectations of newly adopted Mississippi Career- and College-Ready Standards (MCCRS). Performance level increase to “B” in the 2015-2016 school year based on student performance on the Mississippi Assessment Program measuring the MCCRS.

Improvement of the instructional core resulting in increased student achievement through focus on:

- Shifting literacy instruction to a Balanced Literacy model from a basal reading model
- Implementing writing workshop model of explicit writing instruction
- Shifting to concept-focused mathematical instruction aligned with expectations of MCCRS and focused on the mathematical practices
- Implementing collaborative model of planning, scoring, and data analysis within and across grade levels and content areas
- Implementing Professional Learning Communities with the focus of developing teacher leadership in improvement initiatives
- Revising policies and practices including grading, homework, student organizations, assessment practices, collaboration with parents, whole-child supports, community engagement, professional learning, data analysis, discipline, culture, climate, lesson planning, and other academic, social, and emotional practices

Improvement in school and classroom culture and climate through:

- Facilitating staff to establish school vision and improvement goals
- Implementing strategic hiring and support practices, staff recognition, committee membership, transfer of responsibility, building collaboration and coherence
- Implementing Conscious Discipline initiative
- Expanding and improving consistency of Positive Behavioral Intervention Supports (PBIS) through professional development and coaching

*Vice-President, Policy, Research, and Innovation 2002 – 2014*

*JBHM Education Group, LLC (acquired by Generation Ready October 2012)*

*Generation Ready, New York City, NY, and Jackson, MS*

Summary: Initially held a position with JBHM Education Group as an independent contractor providing School Improvement services to individual schools. Progressed through the company to Director of School Improvement responsible for resource development, professional development, and supervision of improvement specialists. Promoted to Vice President of Policy, Research, and Innovation providing leadership for company services across southern region. Served on integration of services and transition team during company acquisition.
Accomplishments: As Vice President of Policy, Research, and Development as well as Director of School Improvement, accomplishments included:

- Contributed to and led development of a comprehensive school improvement process informed by effective schools research as well as other national research and experts
- Led development and publication of School Improvement Implementation Guidance detailing timelines, procedures, strategies, and required implementation procedures utilized by school improvement consultants with client schools and districts
- Developed timeline for implementation of the school improvement process organizing processes into phases and duration of implementation
- Collaborated with school districts to develop customized implementation plans for improvement based on specific needs of schools and districts
- Led development of supervision and audit process of consultant services to determine quality and capacity of consultants to successfully lead school improvement
- Led focus groups and consultant teams in development of consultant training modules and quality assurance procedures
- Led focus groups in the development of additional guidance and support processes for company services provided to schools
- Led development of mid-level management policy and processes for oversight to ensure successful implementation and scalability of services
- Led development of tools and rubrics used by consultants and client schools to gather and report data on quality of classroom instruction and school wide processes for five essential school practices
- Developed data reports for school and district administration displaying data on quality of classroom and school practices related to five essential school practices
- Led and participated in collaboration with local and national partner organizations as well as national educational experts to calibrate and strengthen services and to develop and implement collaborative projects with member schools. Organizations included Effective Schools, The Leadership and Learning Center, Houghton Mifflin Harcourt, Southwest Educational Development Laboratory, Southern Minority Leadership Council, National School Boards Association, Mississippi Association of School Superintendents, Arkansas Association of School Administrators, for example
- Led development of joint service project with The Leadership and Learning Center
- Developed business proposals in response to various Requests for Proposals to provide services to schools and districts
- Developed and delivered numerous professional development modules on a variety of services and topics for consultant and client training
- Managed program development for annual Best Practice conferences drawing attendance from schools and districts throughout the southern region
- Worked independently with seven schools leading each school to substantial improvement evidenced by improvement in student achievement, personnel practice, and accountability ratings
- Delivered proposals and presentations regarding services to school and district personnel, state department personnel, and national organizations
- Managed contracts with vendor partners
Accomplishments: Served as Assessment Consultant and data expert in eleven states throughout tenure. Began as assessment consultant for three-state region and promoted to electronic assessment consultant for eleven-state region.

- Provided support and professional development to districts and schools
- Presented proposals and service overviews to school boards and administrative teams
- Conducted national and state presentations for superintendent, test director, and federal program conferences regarding data interpretation and analysis and instructional implications
- Trained school and district personnel on use of computer programs for assessment and instruction

MS Department of Education, Jackson, MS 1995 – 1998
Served as the Coordinator Norm-referenced Assessment for the Office of Student Assessment; Developed training and support resources, provided professional development, managed vendor contracts and implementation plans, directed development and implementation of assessment conferences, audited school assessment programs, and served as liaison between vendors, the Education Department, and Local Education Agencies

Served as the Director of Title I for the Office of Innovative Support; Provided support and training to schools and school districts, managed the Federal Programs Application documents and process, provided oversight for professional development conferences, and coordinated with directors of additional Federal Program services as well as other Education Department personnel

Attala Economic Development Authority, Kosciusko, MS 1993 – 1995
Designed and implemented a business-sponsored child development program for the Attala County Economic Development Authority. Secured initial licensure, created business processes and guidance resources, hired, trained, and supervised staff, designed policies and regulations, managed operational budget, and managed state regulations compliance

Additional Experience 1986 – 1993

Teacher, Kosciusko School District, MS
Principal, Greenville Christian School, Greenville, MS

Child Care Center Director, Department of Defense, Nuremburg, Germany
Teacher, Western Line School District, Avon, MS
Teacher, Greenville Public Schools, Greenville, MS

Research Skills
Knowledge in SPSS statistical program; Interest in quantitative as well as qualitative methods

Presentations
Specific professional development session titles include:

- *A Framework and Process for School Improvement That Works*
- *Preparing for Rigorous Standards through Improving Literacy K-12*
- *The Many Faces of Diversity: Obstacles, Opportunities, and Outcomes for Leadership Success*
- Presentation to the annual meeting of the National Tri-Caucus Board Development Association and the National Indian School Board Association

In addition to specific titles, professional development experience includes:

- Professional development sessions on a variety of topics presented to various audience types including teachers, administrators, school boards, parents, business professionals, Department of Education personnel, state school boards, and corporate organizations and partners relative to positions held at Mississippi Department of Education, Riverside Publishing, JBHM Education Group, and Generation Ready
- Presentations to various School Boards regarding school improvement services and updates on school improvement progress
- Various presentations for JBHM Best Practice Conferences on topics including evidence-based instructional strategies, school improvement strategies, building capacity for Teachers and School Leaders; Specific instructional topics including differentiated instruction, classroom management, English Language Learners, and Literacy for example.

### Resource Development for Corporate Use

Accomplishments: Through a position of leadership with JBHM Education Group, later acquired by Generation Ready, resources developed and co-developed for corporate use in describing and implementing school and district improvement services include:

- *School Improvement Specialist Implementation Guide*
- *Transforming Schools by Transforming Practice*
- *School Improvement Timeline for Implementation*
- *School Improvement Rubric*
- *School Leaders Performance Rubric*
- *District Leadership Performance Rubric*
- *School/Teacher Performance Rubric*
- *Systemic Performance Rubric*
- *Quinpoint System*
- *School Improvement Checklist of Activities and Descriptors*
- *Leadership Improvement Categories and Essential Skills*
- *Instructional Leadership Reporting Tool (ILeRT) and reports*
- *Criteria for Marking Yes – ILeRT*
- *Struggling Learner Implementation Guidance*
- *English Learner Implementation*
- *Lesson Plan Rubric*
• Lesson Plan Guidance
• Work Report Rubric
• JBHM Education Group: Supporting Teaching, Leading, and Learning (Comprehensive Company Description)

Honors and Professional Affiliations

National Institute for School Leadership Certified (NISL)
Nominated for service on the U.S. Department of Education’s Regional Advisory Committee
Steering Committee for Mississippi Educator and Administrator Professional Growth System
Member of the Mississippi Department of Education Principal Advisory Group
ResearchGate
MS Association of Elementary School Principals
Phi Delta Kappa
Association for Supervision and Curriculum Development
Rotary Club Outstanding Young Professional
Omicron Delta Kappa Honor Society, Delta State University