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Dr. Molly H. Fisher, Director of Graduate Studies

"FROM SCHOOL OF CRISIS TO DISTINGUISHED": HOW ONE SCHOOL CONTINUES TO DEFEAT THE ODDS

THESIS

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Science in Education in the
College of Education at the University of Kentucky

By

Ben Crawford

Lexington, Kentucky

Director: Dr. Molly Fisher, Associate Professor of STEM Education

Lexington, Kentucky

2018

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ABSTRACT OF THESIS

"FROM SCHOOL OF CRISIS TO DISTINGUISHED": HOW ONE SCHOOL CONTINUES TO DEFEAT THE ODDS

Despite conditions that would work against a small rural school in an impoverish area of rural Kentucky, Fairway Elementary School has managed to excel in its accountability measures. This study used a mixed-methods approach with data collected through interviews and MAP student growth scores in reading and mathematics. Five themes emerged from the qualitative data regarding school success: (1) a well-organized intervention system, (2) a focus on and overall enjoyment of the discipline of mathematics, (3) involvement of parents in school functions, (4) transparency of needs and organization of resources, and (5) an overall school culture that is competitive, impactful, and student-centered. Quantitative data revealed large improvements in student growth in reading and mathematics after the adoption of standard-aligned curricular programs in both subjects. Fairway Elementary continues to succeed in their efforts to improve not only student achievement, but the culture of their school within an impoverished community.

KEYWORDS: elementary school, mixed methods, student growth, mathematics, curricular programs

_____Benjamin Crawford_____

_____April 2, 2018_____

“FROM SCHOOL OF CRISIS TO DISTINGUISHED”: HOW ONE SCHOOL CONTINUES TO DEFEAT THE ODDS

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Chapter One: Introduction

With the push for national-level standards, schools in the United States consistently remain in the government spotlight. Administrators and teachers are forced to adhere to new accountability measures and are under scrutiny to meet higher goals each academic year. Amid the aggressive governmental changes, such as the introduction of Common Core Standards for Mathematics and English/Language Arts, as well as the Next Generation Science Standards, Fairway Elementary School (herein, FES) has remained a bright light within its small rural mountain county in the South Central United States. Despite conditions that would work against this type of school in its rural location, FES has managed to excel in its accountability measures, which leaves many other schools wanting to know the secret to their success.

In 2008, FES educated 173 students in grades K-6, and was deemed "low performing" and a "school of focus" due to their performance that fell below the tenth percentile within their state. That year, a new principal was hired, and a school in dire straits began a reformation. Eight years later, in 2016, the school educated 246 students in grades K-6 and was labeled a "distinguished" school after jumping into the 90th percentile of schools in their state. The research questions for this study are the following: *What strategies have been implemented at Fairway Elementary School to account for their success? What trends exist in student growth (MAP) scores at Fairway Elementary School?*

Chapter Two: Literature Review

In reviewing the available literature for this study, an effort was made to find studies highlighting school success in unlikely high performing schools. In doing so, I

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In reviewing the available literature for this study, an effort was made to find studies highlighting school success in unlikely high performing schools. In doing so, I

will highlight meeting stakeholders' needs in schools, the role of parents and administrators in successful schools, and the measure of student growth to indicate school progress toward achieving successful results.

Unlikely High Performing Schools

Kearney, Herrington, & Aguilar (2010), discusses a set of 15 elementary schools in Texas that experience the 90/90/90 phenomenon, which means the school is 90% non-Anglo, 90% economically disadvantaged, and have a 90% passing rate on the Texas' State Competency Exam in both math and English-Language Arts. Kearney et al. (2012) used interviews of school leaders and teachers to identify three themes that emerged from this case study: (1) support structures are in place to support students and teachers alike, (2) relationships with adults in the school and community are established through mutual trust among school personnel, students, and parents, (3) consistency of pedagogy, leadership, and faculty/staff (low turnover). The most interesting of the themes was the consistency of leadership, in which all schools within the 90/90/90 campuses identified that there was stable leadership over time, which was the root of the theme of consistency that was reported by each school (Kearney et al., 2012). This article is limited in that the focus is on quantitative data from surveys and lacks connections to specific efforts and practices of the school and its stakeholders.

A report from the Prichard Committee for Academic Excellence drives to answer two questions about high performing, high poverty schools in Kentucky: (1) "What common characteristics that seem to contribute to high student performance are shared by a set of high-performing, high-poverty schools?" and (2) "What characteristics and practices differentiate a set of high-performing, high-poverty schools with a small

achievement gap from similar high-poverty schools that are neither high-performing nor have a small achievement gap?" (Kannapel & Clements, 2005). In visiting the eight Kentucky schools in their study and conducting interviews, Kannapel and Clements (2005) identified five areas that these schools consistently scored significantly higher on, which include: (1) review and alignment of curriculum, (2) individual student assessment and instruction tailored to individual student needs, (3) high academic expectations for all students (growth and achievement in all subject areas), (4) professional development for staff that is connected to student achievement data (focusing on addressing achievement gaps and trends), and (5) efficient use of resources and instructional time. This is consistent with the research by the Barley and Beesley (2007), which found that the top factors of rural school success were high expectations for all students (i.e. attendance, assessment performance), structural supports for learning, and the use of student data.

The Education Trust (1999) analyzed survey data to identify common characteristics of 1,200 schools identified as both top performing and high poverty. One significant finding was that 80% of these schools reported that state standards are used extensively to design curriculum and instruction (Education Trust, 1999). In fact, 94% of schools surveyed responded that they use standards to assess progress and mastery of students (Education Trust, 1999). The Education Trust (1999) outlines five consistent findings that were true across these top performing, high poverty schools: (1) Increased the instructional time for reading and math content in order to help their students meet standards, (2) District and/or state accountability systems that have consequences for teachers and administrators in schools, (3) Larger proportions of Title I dollars are spent on professional development, (4) Comprehensive systems in place to monitor student

mastery of standards, which directs educators to provide additional support for those not mastering standards, (5) Focus on efforts to involve parents on helping students meet state standards. In using state standards and monitoring systems, schools are able to track student progress data and essentially hone in on students with unmastered standards to provide the support necessary to become proficient (Education Trust, 1999). In addition, promoting parental involvement in proficiency of standards and holding adults accountable may impact student achievement.

In combining the findings from several research studies, the common characteristics of high performing, high poverty schools are consistent across the country (Barley & Beesley, 2007; Education Trust, 1999; Kannapel & Clements, 2005; Kearney et al., 2012). First, it is important to note that curriculum, instruction, and assessment were always aligned to the respective state or national standards. Also, there is consistently a support structure, both for students to be provided for academically and personally and teachers to be provided with professional and administrative support necessary to be successful. In searching for other qualities of successful schools, it is essential to explore patterns of success in all high performing schools. It is also necessary to note larger research studies throughout the literature often focus on specific data and findings and do not inform their results with qualitative data in order to give the reader more information about the success of certain programs and support structures.

Stakeholder Needs in High Performing Schools

In 2005, a case study in North Carolina identified patterns that were apparent in a variety of successful schools (Cooper, Ponder, Merritt & Matthews, 2005). Data was collected in the form of interviews that were transcribed and coded, observation notes

will highlight meeting stakeholders' needs in schools, the role of parents and administrators in successful schools, and the measure of student growth to indicate school progress toward achieving successful results.

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that were taken by the research team, and archival documents were examined for each school (Cooper et al., 2005). After analysis, the research team identified five principle themes that were consistent across all eleven schools, regardless of size, location, or demographic makeup: relationships and connections among faculty members and students, the development of support systems for students and faculty, data-directed dialogue and collaborative instruction, encouraging strong, hardworking departments within the school, and collaborative leadership (Cooper et al., 2005). It is interesting to note how many of these themes are rooted in communication and professional communities.

Honing in on the success of smaller schools, it is important to note that research shows students in low-socioeconomic communities perform much better in small schools (Howley, 1994). In considering the importance of schools having a sense community, as discussed in Cooper et al. (2005), it is easy to see how building a community could have a larger impact on small scale schooling in small communities. Howley (1994) notes that smaller school size can have a large impact on the responsiveness to student needs, since it is easier to identify students' needs and respond to them appropriately and in a timely manner. In responding to student needs, it is imperative to understand the role administrators and parents play in individual student success, as well as the overall success of a school.

Student Needs

It is consistent among research that responding to student needs is important for the success of schools. In a case study by Martin, Fergus, & Noguera (2010), a high-performing elementary school for immigrant children was studied to identify strategies

for meeting student needs, which they attribute to the school's success. In two phases of data collection, focus groups with students, staff, and parents as well as formal classroom observations, interviews, and achievement data, researchers were able to identify four key strategies for meeting the needs of the whole child: (1) improving literacy through extended learning opportunities (e.g. after-school and summer school programs), (2) onsite professional development focusing on curriculum and teacher induction, (3) network organization and (4) network support to have an organized line of support to meet the students' needs (Martin et al., 2010).

In another case study by McLeskey, Waldron, and Redd (2012) researchers revealed six themes that emerged from the case study exploring the effectiveness of a highly-inclusive learning environment, where the school: (1) meets the needs of all students (personal and academic) through special services, such as the youth resource center and the school intervention system, (2) provides high-quality instruction to all students through effective pedagogy and curriculum, (3) immerses teachers in several professional development opportunities developing teaching strategies and curriculum, (4) is very efficient, yet flexible in its use of resources, (5) shares decision making amongst all stakeholders, and (6) uses data to drive decision making at the classroom, grade, and school level. The study cites that the inclusive learning environment led to significantly higher proficiency levels on student assessments for students with disabilities and those from high-poverty backgrounds (McLeskey et al., 2012). Another research study cites these student support systems, such as early childhood education programs and educational summertime programs, may have even more of a profound

effect for low-income students if classroom and teachers support of students begins before kindergarten (Lee & Bierman, 2015).

Parents' Role in School Success

Parental involvement was explored through a case study by Smith (2006) where a school volunteer observed and interviewed parents, faculty, and students, in order to define the parental involvement at a low-income school. In defining parental involvement, the school includes times when parents use school resources, such as the school's family services office or take advantage of any service the school offers, rather than only including times parents volunteer or attend extracurricular activities (Smith, 2006). The school was intentional in recognizing that parental involvement looks different for low-income schools, as the school may need to provide services for parents as well as students, rather than expecting the parents to be an additional resource (Smith, 2006). Research suggests that schools must develop strategies for parental involvement that work with the specific population of the school, as internet access, transportation needs, and cell-phone access and service varies greatly in different communities (Bower & Griffin, 2011).

In a more specific case, Ingram, Wolfe, and Lieberman (2007) used a questionnaire to survey parents about their involvement in schools that serve high-achieving, low-income, at-risk populations. The findings revealed a correlation between parental involvement and higher performance, with certain types of involvement correlating higher. The most effective involvement was an investment in resources to learn at home, such as books, technology, online resources, etc. (Ingram et al., 2006). Most encouraging, from this study, was parent feedback that suggested that schools can

influence parental involvement in a child's education by providing training for parents on how to help their child in the home, as well as training for teachers on how to influence and increase the involvement parents have in the home (Ingram et al., 2016). Other research also points towards communication and home learning activities employed by the classroom teacher can have a tremendous effect on parental involvement in a child's education, therefore a teacher's instructional strategies and communication with parents potentially has a great impact on parental involvement (Bower & Griffin, 2011).

Administrators' Role in School Success

The principal is a true facilitator of communication and collaboration, with the role of establishing a positive school community with professional learning communities within (Brown, 2016). In the case study by Brown (2016) the data revealed four types of support the principal provided to increase student achievement: (1) establishing a positive school community with professional learning communities in mind; (2) creating an efficient schedule with protected math and reading blocks; (3) budgeting with professional development in mind; and (4) making student achievement data drive instructional decision making and interventions. If these four supports are provided by school leadership, the potential for school success increases tremendously (Brown, 2016).

School administration also sets the tone for student motivation of not only students, but faculty and staff throughout a school (Butterworth & Weinstein, 1996). Butterworth and Weinstein (1996) provide an ecological perspective on motivation through six vignettes, highlighting what principals can do to involve staff, students, and parents to link experiences in the classroom to those in the community. One suggestion made is to create a "diversity of niches" for students, staff, and families to feel welcome,

included, and give them a place to explore and share their talents in order to create a community of motivated and successful learners (Butterworth & Weinstein, 1996). Another revelation from the vignettes includes "building an interdependence between system levels" to create a shared purpose of all stakeholders and promote regular communication and negotiation through school newsletters/newspapers, open houses, parent-teacher nights, and digital communications (Butterworth & Weinstein, 1996). The principal is the leader of the school, therefore he or she sets the tone for all activities within the school community and the academic impact on students outside of school.

Measures of Academic Progress (MAP) Testing

According to the Northwest Evaluation Association (NWEA), MAP Growth creates a personalized assessment experience that accurately measures performance—whether a student performs on, above, or below grade level (MAP Growth, 2018). MAP tests are developed by educators and are under constant review and evaluation by educators. These assessments monitor growth by seasonal testing (fall, winter, and spring) of various subjects, including but not limited to, math and reading. By testing three times per year, students are given scores that schools can then use to determine student growth throughout the school year. MAP uses computer adaptation, in which it adapts to the student taking the test, making an effort to close in on a specific score to assign each student. MAP tests typically contain between 40 and 60 questions and are computerized, untimed, and multiple-choice assessments.

MAP is a growth assessment which, unlike achievement assessments, measures individual student growth and shows no correlation to achievement testing (DeLong, 2007). MAP is often placed in school improvement plans to outline the growth goals for

students in reading and math throughout the school year. This can show when students show any type of growth (or no growth) to pinpoint specific successes or struggles. Shen, Cooley, Reeves, Burt, Ryan, Rainey, and Yuan (2010) found an increasing number of school and school district administrators are using MAP data to drive their decision making. Although schools are not required to use MAP for national or state accountability measures, many school systems choose to do so at the district level. MAP tests can be administered for a variety of subjects at any grade level, including math, reading, language usage, and science.

Research by Pane, Steiner, Baird, and Hamilton (2015) shows an increase in student progress through MAP scores, in addition to higher achievement scores, as a result of implementing personalized learning practices in 62 schools during the 2013-14 and 2014-15 school years. MAP scores added to their findings, in that they highlighted the significant gains made by students in mathematics and reading in these schools which were much more significant than a comparison group made up of similar students from comparable schools (Pane et al., 2015). In this scenario, MAP scores offered a different perspective into the improvement of these schools.

MAP testing has also been used to determine the existence of a relationship between other factors. Kitts (2011) compared National Board certified teachers' students' achievement and growth to those without the additional certification. The study compared students based on percentage of students meeting growth target, overall growth, and RIT (achievement scores) using MAP data (Kitts, 2011). Descriptive statistics for National Board certified teachers and non-National Board certified teachers revealed similar results and no statistical significance. Vierra (2014) used MAP scores to determine if

there exists a relationship between academic performance and critical thinking skills. A one-way ANOVA was used to determine a relationship between the California Critical Thinking Skills Test Middle Schools Series (CCTST-M) and MAP outcomes (Vierra, 2014). Results showed that MAP reading and mathematics scores were a significant predictor for critical thinking skills (Vierra, 2014). Similar findings exist between the Missouri Assessment Program (MO MAP) and NWEA's MAP assessments for reading, language usage, and mathematics identified by using bivariate and multiple regressions (Shields, 2008).

Chapter Three: Data Analysis

In the case of attributing the success of a school, it is important to explore various aspects of the school community to fully understand the context in which there are results of success (e.g. teacher and student support systems, community involvement, etc.). A mixed methods approach was used, in order to collect, analyze, and integrate both qualitative and quantitative data to address both research questions. According to Creswell (2013), a mixed methods study is warranted when qualitative research or quantitative research is insufficient in fully understanding the problem. In this study, the need for mixed methods arises from the need to create a complete understanding of Fairway Elementary School's initiatives in the context of their academic progress. Qualitative data were collected in the form of answers to an interview protocol (see Appendix) and were coded to provide a data set that can reveal trends and beliefs of individuals within the school community. Quantitative data (MAP data) were received from the school district's data personnel and were analyzed using two one-way ANOVAs and a Tukey post-hoc comparison test to locate statistical significances. Fairway's data

had several students with missing data points, which had to be removed because a longitudinal analysis cannot be performed for students with only one time-point. Students were also removed from the multi-year comparison for missing data for the same reason. This was necessary in the data set, as there was considerable attrition both within and between academic years. By using the mixed methods research method combined with "category construction" (Merriam, 2009) to detect themes in the data, this study aims to understand the changes in success at FES.

Chapter Four: Methodology

Participants

The participants in this study consist of the faculty, administration, and other school personnel from Fairway Elementary School. The students at FES closely represent the population of their rural county with a population of 98% white students and over 90% of that qualify for free/reduced lunch (an indicator of socio-economic status in the United States). Many students in the school face unimaginable hardships at home such as being raised by grandparents or other family members, not having sufficient food supplies, and not being able to purchase needed school supplies. Pre-K is not always utilized for some students, even though several options are supported by the state. The Brigance Assessment is used to assess readiness for entering Kindergartners. In 2015, only 18% were deemed ready, compared to only 7% the year before.

School Context

There are 13 certified teachers at FES in grades K-6 (which includes two teachers of exceptional children) and they closely represent the typical population of elementary teachers in that they are predominantly white females (all white, 11 females, 2 males). In

addition to these K-6 certified classroom teachers, there are a myriad of support staff and other faculty consisting of specials teachers, a curriculum coach, a reading recovery specialist, computer lab coordinator and others, all with a variety of educational backgrounds and experience levels. There are typically one to two classes per grade level (each with one certified teacher) depending on the class sizes for each academic year. The class sizes fluctuate between 20 and 30, with the smaller class sizes more prevalent in the grade levels with more than one class. In larger classes, assistance is usually provided in the form of a teacher's aide and teachers are regularly moving between grade levels each school year in order to meet the needs of the changing class sizes.

Qualitative Data Collection

Teachers, administrators, and other school personnel were interviewed using a semi-structured interview protocol (see Appendix). Of the 13 certified classroom teachers, 12 were interviewed as one was not available during the interview visits. In addition to those 12 teachers, nine other faculty and support staff were interviewed, including the curriculum coach and the principal. "Category construction" (Merriam, 2009) was used to establish the interview protocol and analyze the data for relevant themes. The interview protocol was organized in a way that all questions based on the individual's classroom and teaching style were grouped together and then questions based on their thoughts of the school and administration were also grouped together. The specific themes from the literature were organized into one of those two categories throughout the interview protocol. Each interview lasted 30 to 60 minutes and were later transcribed for analysis. The responses were entered into a large spreadsheet and organized such that each participant had their own column and each row represented

questions from the interview protocol in order to compare all answers in one row. This data entry procedure resulted in themes emerging and the responses were organized into smaller groups based on these emergent themes and new categories. Merriam (2009) describes these categories as "same as a theme, a pattern, a finding, or an answer to a research question" (p. 178).

Quantitative Data Collection

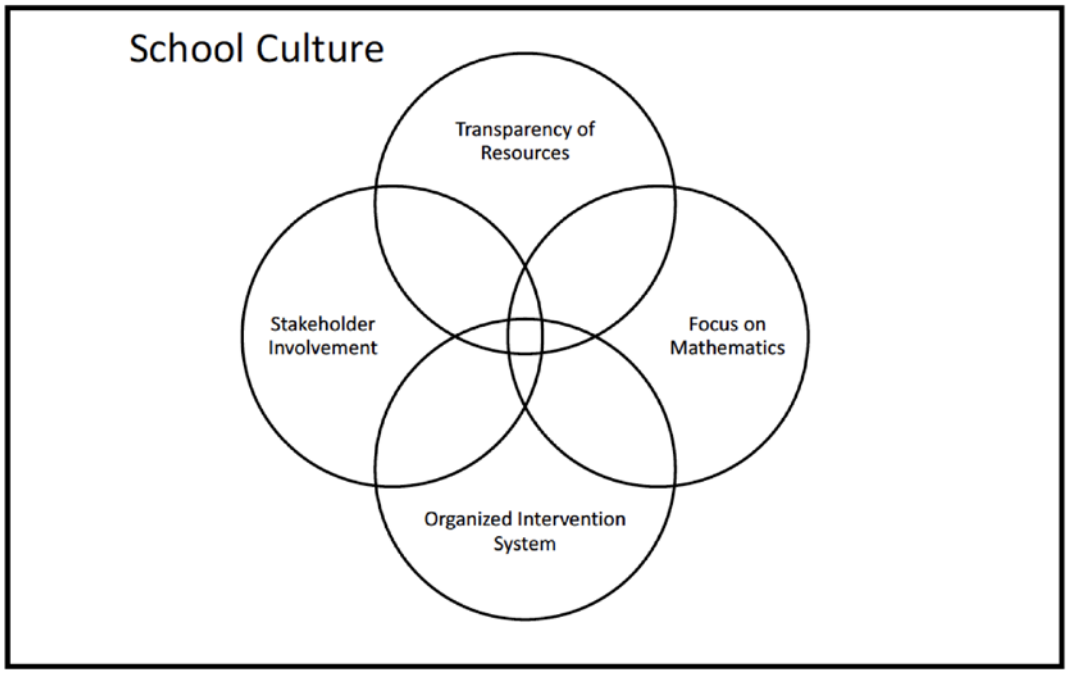
MAP data were analyzed for four school years, beginning during the 2013-2014 school year through the 2016-2017 school year. Student scores were provided in math and reading for each season (Fall, Winter, and Spring) for all K-6 students at Fairway elementary. The first step was running two separate one-way ANOVAs, one for math and one for reading. After finding there were few statistical significances, a Tukey *HSD* post-hoc comparison test was used to pinpoint where statistically significant differences occurred. This was done looking at both season-to-season growth and yearlong growth. After identifying significant differences in growth, what efforts for school improvement took place during that time period were compared.

Chapter Five: Results and Discussion

The overarching themes regarding the success of FES emerging from the interviews were: (1) a well-organized intervention system, (2) a focus on and overall enjoyment of the discipline of mathematics, (3) involvement of parents in school functions, (4) transparency of needs and organization of resources, and (5) an overall school culture that is competitive, impactful, and student-centered. FES's central focus is on school culture and instilling pride in the students and parents in the community. Within that larger focus of culture exists four other clear themes that are prevalent in their

success: Transparency of resources and needs, stakeholder involvement, a focus on mathematics, and their highly organized intervention system (see figure 1). Each of these four smaller themes are synergistic in nature and work together to support a product that is greater than the sum of its parts.

Figure 5.1. *Themes of Fairway Elementary School's Success*



Organized Intervention System

Fairway Elementary School has an organized intervention system designed to provide opportunities for students to work with faculty and staff members to get caught up to grade level. The most commonly identified strategy for success in a high-achieving, low-income, rural school are the creation of a support system or structure that provides various types of support needed specific to its faculty, staff, students, and families (Kearney et al., 2012; Barley & Beesley, 2007; Education Trust, 1999; Cooper et al., 2005; Martin et al., 2010; Brown, 2016). FES implements a three-tiered intervention system to support students at all levels.

Tier I - Identification. The intervention system at FES begins with the identification process, where students are categorized by achievement and identified early when a problem is seen. At the beginning of each school year, grade levels with more than one class are split into different teachers' classes by ability group. This allows for teachers to provide consistent interventions and alternative instruction when needed. Miss Haste explains her lower-ability fourth grade class, "We are ability grouped by homeroom, so my whole group is struggling, so what we do is I go back in the afternoon and I address missing skills. So, our afternoon block is completely based on what skills are they missing and what they need most as a fourth grader."

In addition to creating homeroom classes by level, the school has a mathematics program that differentiates assignments for students. Many teachers spoke about Pearson's enVisionMATH program, which provides differentiated instructional resources, formative assessments, and practice assignments in the form of worksheets and online submission. The online program allows for students to access various resources for help, such as videos, tutorials, etc. and retry any incorrect items. Teachers spoke about being able to efficiently divide their classrooms into various groups using a daily formative assessment provided by EnVisionMATH. There are also reading programs, including IXL, Lexia Learning, and Alphie's Alley, which place students on their current level and advance them as they progress through content. The school's curriculum coach works alongside teachers to use these diagnostic computer programs to understand where students are struggling and when they need further instruction. All of these strategies begin within the classroom and if teachers see a need for further help, they begin Tier II intervention and actually begin to pull students out of the classroom.

Tier II - Intervention outside of the traditional classroom. For Tier II intervention, students are placed by grade-level into a math and/or reading intervention group with a supplemental staff member or "specials" faculty member. Throughout their Tier II interventions, data is kept and reported to the school's curriculum coach. Once a student shows growth and is caught up, they may be removed from the Tier II intervention group(s) to create room for other students. Sometimes a student may remain in Tier II interventions for a prolonged amount of time, allowing them to receive continuous interventions as needed. There are full-time interventionists who are classified staff members, and certified "specials" teachers, such as the gym teacher and the computer lab teacher, that serve their time outside of their typical classes working with students to catch them up to grade level. Ms. Williams is the computer lab teacher that regularly works with students that are in various tiers of the intervention system. She describes her work with these students by saying, "they have to go through 3 tiers before you can try to get them tested [for special education]. So, that's what they're getting with me – one on one and small group...Lots of interventions so we can document and test for special ed." This time is available to those teachers because the school is so small it only requires less than half-days of teaching those classes to see all students once per week, so teachers like Ms. Williams can still conduct her computer lab instruction as well as assisting in the tiered intervention program.

Tier III – One to one instruction. Once tier II interventions are put in place for a prolonged period of time, students may be referred for tier III intervention if there is little to no improvement. Once a student reaches tier III, they are assigned to an individual teacher, where they use varied strategies to teach basic skills that hinder

students from learning in the traditional classroom. Ms. Robinson, a resource teacher, says they do not always pull students out of the classroom, only when they see them struggling with a particular concept. During tier III intervention, students receive one to one instruction that is outside of the core classroom instruction in order to help the students be successful. If the student does not show process with the tier III interventions, then they will begin a referral and testing process for special education classification.

The entire intervention system is fluid and adjusts to student's needs based on data collected by both classroom teachers and interventionists. This is consistent with the findings of Martin et al. (2010), which identified two of four key strategies for meeting the needs of the whole child included: network organization and network supports to have an organized line of support to meet the students' needs. Both the principal and curriculum coach support each step of intervention and ensure the process continues to meet the needs of all students. At no level in the process does any staff member essentially give up on any student. Principal Thomas describes this mentality by saying, "My advice, is you can't give up on them. A lot of times, it might be that relationship builder. I think that if a kid will 'run through a wall' for you, they're more apt to listen and participate and try to do better."

A Focus on Mathematics

With STEM Education initiatives being introduced for students at a younger age, this increases the accountability measures for mathematics education (Dejarnette, 2016). With the additional testing taking place in this subject area, many schools are focusing more on mathematics within their daily schedules by adding additional mathematics class time, further interventions in mathematics, and other mathematics themed events. FES is

no exception to that norm, however, unlike with typical elementary teachers, mathematics is the subject most Fairway teachers prefer to teach (Wilkins, 2010). Of the eleven certified teachers at the school, seven agreed that mathematics was their easiest subject to teach with some of them using their prior undesirable experiences with the subject as a reason for their newfound appreciation for the subject. Miss Haste, a fourth-grade teacher, explained her reason for this by saying "I absolutely love it. I'm passionate about it and I enjoy it. Because I enjoy it the kids get excited about it and it just flows really well. Which is really funny, because I used to hate math, but I love it now." This is further explain by Ms. Robinson when describing how she teaches mathematics to her special education students, "It's weird, but...math was my hardest subject and I struggled so much as a kid and things never clicked with me for some reason. Now as an adult, it does. So, I learned things as a kid...I struggled so much I made up sayings and did all kinds of crazy stuff to remember what to do, so I think that helps me teach my special ed kids."

It should be noted, that three of the four teachers that did not feel mathematics was their easiest subject to teach were teachers in the fifth and sixth grades where mathematics instruction can become increasingly more complex with deeper instruction of algebra concepts and rational number operations. Two of those teachers noted the building aspect of mathematics that contributes to the difficulty of teaching it. This was described by fifth grade teacher, Ms. Harper when discussing her first experiences at FES teaching math by saying "I'm teaching them and looking to see what they already know, adding to it, and teaching them how to learn how to do it." Principal Thomas noted that the vertical aspect of mathematics can many times be tricky, "even absences affect that. If

you’re not here they get frustrated, parents get frustrated.” Frustrated parents that are many times decades removed from mathematics courses can get additional help through the curricular resources available at FES. Perhaps the ease of teaching mathematics can be attributed to the curriculum and resources in use at FES as well as the previously described intervention system in place to support struggling learners. The use of enVisionMATH for their instruction as well as an online resource called iXL for remediation help expedite the learning process in mathematics. The enVisionMATH curriculum contains online videos and help sites designed for parents to help provide them instruction for helping their child outside of the school day. This supports previous research indicating that having ways to learn at home as well as parental instructions can be beneficial for increasing parental involvement (Ingram et al., 2006; Bower & Griffin, 2011). The enVisionMATH curriculum and iXL also provides differentiated assignments for students, depending on their level of understanding.

During the winter months, when absenteeism is above 15% for three to five consecutive days, the school system will close schools to allow time for students and staff to recover from illness. During the 2016-2017 school year, Fairway Elementary lost 13 instructional days, with the majority of them due to illness. They were allowed 9 “non-traditional instruction” days in which students completed assignments from home in order for the day to be counted as an instructional day. FES teachers do not let days like this prevent them from teaching the concepts they are required to teach. The online videos and curriculum through enVisionMATH and iXL are invaluable for teachers, students, and parents when instruction must take place at home. For students who do not

have access to the internet at home, teachers provide "snow packets" of assignments that they can complete for credit in order to remain caught up with instruction.

Involvement of All Stakeholders

Research has shown a correlation between parental involvement and high student performance (Ingram et al., 2007); However, Bower and Griffin (2011) found that parental involvement opportunities must be specific to the population of the school. This is something that FES excels in as they carefully plan activities that support the families involved with the school in order to increase involvement. They use common methods of communicating information, such as newsletters and social media outlets; However, FES uses family gatherings and meals to promote parent involvement. Typically, around once per quarter, they host an event either before school hours or in the evenings and the cafeteria workers prepare a meal suitable for the time of the event. They have hosted breakfast meals, dinners, full Thanksgiving meals, ice cream socials, and other events to bring parents and families to the school. This is a time for parents to learn more about the school, the principal, and their child's teachers. The teachers also use this time to informally communicate with parents about their child's progress and other upcoming events. The informal communication is very important for Principal Thomas. Formal conferences are intimidating for parents as many of the parents involved with the school did not finish high school, so being in a room with several education professionals is overwhelming for them. Thus, these informal events remove the intimidation factor involved with attending a meeting at their child's school. Principal Thomas explains, "When we engage them, I think it's more of a culture piece, versus the academic." He

believes once the supportive culture is established, the academic piece will come naturally.

At least once per year, FES hosts a "parent workshop" where they invite parents to the school to learn about the school curriculum resources. They typically pair this event with their winter holiday program in which most students are involved in order to promote higher attendance. During this event, the faculty teach the parents how to use the online resources available with their curriculum materials and how to log into the parent portal and check their child's progress. Since this occurs in the month of December, it is prior to the possible winter weather days that can cause cancellation, so it is an ideal time to teach parents about the non-traditional instruction days that may be needed during the upcoming winter months. When Ms. Lewis (the curriculum coach that plans most of these events) was asked whether they had strong participation, she stated "A lot come to that because we feed them." Hosting a family meal has proven to be a successful tactic for inviting parents and families to the school since many of the families involved with FES students do not consistently receive hot meals.

Another surprising source for family involvement at FES was the emphasis placed on sports. Principal Thomas is a former coach that recognizes the impact that sports can make on school spirit and pride. FES is in a state that places a high importance on the sport of basketball and Principal Thomas and his colleagues use that as a method for bolstering school pride and community involvement. The school has two boys' basketball teams (one for lower grades and one for higher grades) and the teams regularly perform in the county basketball championship. In addition to the boys' basketball teams, they support cheerleading squads during these events. The cheerleaders perform during

basketball games and also compete for the county titles in cheerleading each year. The faculty also realize the importance of sports in supporting community involvement and use these events to capitalize on parent contacts. During the basketball games at FES, the basketball gym is full of students, parents, and other community members there to support their local team. Ms. Edwards candidly describes her informal parent meetings at basketball games, "I can catch them at ball games...I don't know how many parent-teacher conferences we have at ball games. But, they'll start it with 'How are they doing in class' and I'm like, 'Well, glad you asked.'" This pride for the sport and their success in it means that students want to come to FES to participate in their sports programs because they want to participate in a program with that level of support and excitement.

Transparency of Needs

Much of the growth of FES can be attributed to the resources made available to students, teachers, and families. Research shows the efficient use and flexibility in using resources are common themes in high-performing, high-poverty schools (Kannapel & Clements, 2005). At FES, teachers are met with almost any need they have with a responsive administrator and swift action. When asked if there was anything needed to make teachers' jobs easier, April Haste, a fourth-grade teacher, responded with "Honestly, I couldn't think of anything. If I need a supply, if I have an idea, if I have a concern, there's never been anything I went to him [Principal Thomas] with that he's not went out of his way to make it happen."

Each teacher interviewed was asked to identify their "greatest resource at this school." Often, teachers gave multiple answers because they know who to go for the type of support they need. "That's a tie, because I have several people I go to." said Miss

Haste. The most common answer to this question was the curriculum coach, Ms. Lewis. She is credited for being able to answer any question anyone in the building has, or she at least promises to return with an answer. She also creates pacing guides for each teacher and goes through them and how they connect to common core state standards. Ms. Lewis also reviews data from standards-based assessments with teachers in an effort to guide future instruction, enrichment, and interventions. Teachers indicated they could go to either the principal or curriculum coach for anything. An instructional assistant, Abby Owens said "I feel confident that if I needed anything, whether being a book or pencils or something fixed in the room, I would go to either of those two."

When it comes to technology, the school has immersed itself in resources to support students, teachers, and families. The school is working to become one-to-one with chromebooks in the coming years. Students use these on a daily basis to support learning through the use of common core aligned math and reading programs. This resource fuels the intensive intervention program at FES. Almost every teacher also uses "Class Dojo", a communication tool that anonymously notifies students of behavior issues in the moment without disrupting the flow of the class and drawing attention to the student's misbehavior. It also provides information to parents through a messaging system that can be used on a computer or mobile device. In addition to these classroom technologies, the administration ensures support staff, such as interventionists, speech therapists, etc. are given the technology and resources they need. If chromebooks aren't available, there are iPads made available when needed.

Overall, there is a spirit of friendly competition at FES which drives the entire faculty and staff to continuously improve. This spirit is met with a community of teachers

willing to reach out and help others, as well as ask for help when needed, which was not always the case in the past. Speech teacher, Ms. Wilson said, “If teachers don’t know how to do something or need help with something, they will ask. They will search out how to do something. If they aren’t having success in something, they’ll go to someone and say ‘What am I doing wrong?’, whereas before they would probably skip it.”

School Culture

The culture at Fairway Elementary School is one of support and competitiveness. Teachers and students are not competitive with one another, yet with themselves and other schools. They always work to improve and show growth and achievement. Research highlights the importance of establishing a positive school community with professional learning communities in mind (Brown, 2016). Ms. Robinson, a special education teacher, says the school has a “competitive spirit” and “Everyone works as a team, for the good of the school as a whole.” This competitiveness was a consistent theme when asked to describe the school or administration in one word or phrase. Teachers attribute this competitive school spirit entirely to the principal, Mr. Thomas.

This competitive spirit drives students, faculty, and families alike to improve in many facets of their lives. When it comes to student growth and achievement, students are positively reinforced consistently with verbal praise, field trips, and other various recreational opportunities. Any type of win or improvement is celebrated and made to be a big deal for students, even something as simple as having the highest attendance percentage in the district for the week. This simple celebration keeps students wanting to come to school and their attendance stays high, ensuring students maximize their time for instruction and interventions.

Similarly, teachers are competitive in that they want to improve their own practices and classrooms. Teachers seek out help for anything they need and provide support for other teachers when needed. They come together as a team to be the best school they can possibly be. When asked about the school's success, Ms. Hall, an instructional assistant, responded, "I think because everybody works together, you know, everybody wants what is best for our kids and we want to see our kids succeed."

School culture has also changed in the past few years from the revamped basketball program at previously mentioned. Many students are involved in the basketball program, which has grown to become one of the highlights of the community. To compete, students must meet both academic and behavioral standards set by the school, which drives students to be their best during the school day. Basketball games gets many families in the doors of the school, which helps them feel more comfortable when they come back for family night or open house. Ms. Owens, an instructional assistant, says, "What helped the school take off was the basketball and him [Principal Thomas] really getting the kids in afterschool things, such as academics and basketball. Even like when they do open house, I remember we might have 20 people, now you can barely get in. We do a Thanksgiving dinner and there will be a line out the door. [Principal Thomas] definitely got the community involved."

Another part of the school culture comes from the Site Based Decision Making Council (SBDMC), which makes schoolwide decisions, such as hiring teachers. Ms. Robinson of the SBDMC described that when the current principal came to Fairway, "It stopped being about politics with hiring." She said they simply began to hire the best candidate, instead of worrying about the politics that often consume small town schools.

This ensures they can continue hiring faculty and staff members with similar enthusiasm and drive for success. The competitive spirit contributed to this practice, as the faculty and staff want to be the best school they can be when they come together.

Student Growth Indicators

MAP data can be used to compare season-to-season growth within the same academic year but is not used to compare season-to-season growth against different academic years. Using MAP scores, there were several season-to-season comparisons that were found to be statistically significant, however they were either from Fall to Spring or from different years. There were no significant comparisons from Fall to Winter or Winter to Spring of the same year. There was no apparent pattern or large change when looking at season-to-season growth at the school level or grade level, either, as seen in Table 4.1, Table 4.2, and Table 4.3.

Looking at grade-level specific mean scores in math and reading (Table 4.2 and Table 4.3) from season-to-season shows variance in the scores from season-to-season, but no statistically significant trends arise. Kindergarten had to be removed from the data, because there were as little as 4 students' scores in one season due to missing scores. Breaking down season-to-season scores by grade level may not give a valid picture of the score trends, as the number of missing data from students was prevalent in some seasons, years, and grade levels. There were also many students who had less than all three data points from the year (e.g. a student took the MAP test in the Fall and Winter but missed the Spring assessment). It was considered to only include students with all three data points, but the number of students removed from the analysis would have been too large to proceed. This would have also removed an important and large group of students from

the data set; transient students and those with poor/spotty attendance. However, when looking at year-long growth (Fall to Spring growth totals) there was a large increase in reading growth from the 2014-2015 school year (average student growth was 8.47 points per student) and the 2015-2016 school year (average student growth was 13.51 points per student), as seen in Table 4.4. There was also a four-point increase in student math growth average over a two-year span, from 2013-2014 to 2015-2016.

Table 5.1. *Season-to Season Average MAP Student Growth*

Season to Season	Average Per Student Reading Growth	Average Per Student Mathematics Growth
Fall to Winter 2013-2014	4.70	3.91
Winter to Spring 2013-2014	3.19	6.52
Fall to Winter 2014-2015	5.21	7.47
Winter to Spring 2014-2015	3.26	5.32
Fall to Winter 2015-2016	8.23	7.62
Winter to Spring 2015-2016	5.28	6.69
Fall to Winter 2016-2017	6.71	7.13
Winter to Spring 2016-2017	4.67	7.18

Notes. Fall 2013-2014: $N = 181$; Winter 2013-2014: $N = 193$; Spring 2013-2014: $N = 199$; Fall 2014-2015: $N = 185$; Winter 2014-2015: $N = 181$; Spring 2014-2015: $N = 191$; Fall 2015-2016: $N = 205$; Winter 2015-2016: $N = 213$; Spring 2015-2016: $N = 205$; Fall 2016-2017: $N = 206$; Winter 2016-2017: $N = 200$; Spring 2016-2017 $N = 194$

Table 5.2. *Season-to Season Average Reading MAP RIT Score by Grade Level*

Grade Level	Fall 13-14	Winter 13-14	Spring 13-14	Fall 14-15	Winter 14-15	Spring 14-15	Fall 15-16	Winter 15-16	Spring 15-16	Fall 16-17	Winter 16-17	Spring 16-17
1st Grade	158.33	164.63	173.75	145.78	152.47	160.61	143.19	150.44	167.25	168.50	168.67	179.63
	N = 33	*N* = 36	*N* = 36	*N* = 42	*N* = 39	*N* = 38	*N* = 16	*N* = 18	*N* = 16	*N* = 6	*N* = 9	*N* = 8
2nd Grade	181.71	183.21	186.81	174.63	178.89	181.72	156.44	165.17	170.90	158.25	163.65	173.41
	N = 25	*N* = 30	*N* = 32	*N* = 38	*N* = 36	*N* = 39	*N* = 57	*N* = 57	*N* = 52	*N* = 28	*N* = 26	*N* = 22
3rd Grade	183.55	188.48	190.19	184.11	190.11	193.03	174.73	182.67	187.48	163.44	170.95	175.27
	N = 22	*N* = 26	*N* = 27	*N* = 29	*N* = 28	*N* = 32	*N* = 40	*N* = 40	*N* = 44	*N* = 73	*N* = 68	*N* = 66
4th Grade	190.96	198.04	191.04	194.61	198.67	197.68	188.03	196.65	198.89	185.07	191.17	195.17
	N = 26	*N* = 26	*N* = 26	*N* = 28	*N* = 27	*N* = 28	*N* = 39	*N* = 45	*N* = 40	*N* = 42	*N* = 43	*N* = 42
5th Grade	202.74	208.45	208.42	202.45	205.70	206.65	193.04	201.74	206.14	195.82	201.13	202.76
	N =34	*N* = 33	*N* = 33	*N* = 24	*N* = 25	*N* = 25	*N* = 27	*N* = 27	*N* = 29	*N* = 37	*N* = 36	*N* = 41
6th Grade	204.04	205.73	212.22	214.04	214.31	216.96	205.59	209.96	212.84	205.04	212.41	212.04
	N = 25	*N* = 26	*N* = 27	*N* = 26	*N* = 27	*N* = 27	*N* = 29	*N* = 30	*N* = 28	*N* = 24	*N* = 23	*N* = 23

Table 5.3. *Season-to Season Average Math MAP RIT Score by Grade Level*

Grade Level	Fall 13-14	Winter 13-14	Spring 13-14	Fall 14-15	Winter 14-15	Spring 14-15	Fall 15-16	Winter 15-16	Spring 15-16	Fall 16-17	Winter 16-17	Spring 16-17
1st Grade	158.97	167.44	176.08	145.37	153.16	163.74	136.75	146.72	158.25	162.33	160.33	171.00
	$N = 33$	$N = 36$	$N = 36$	$N = 42$	$N = 39$	$N = 38$	$N = 16$	$N = 18$	$N = 16$	$N = 6$	$N = 9$	$N = 8$
2nd Grade	183.88	185.90	192.90	173.82	180.31	186.21	154.24	164.85	175.26	155.43	163.12	171.82
	$N = 25$	$N = 30$	$N = 32$	$N = 38$	$N = 36$	$N = 39$	$N = 57$	$N = 57$	$N = 52$	$N = 28$	$N = 26$	$N = 22$
3rd Grade	186.27	190.08	199.59	184.57	194.29	198.53	178.63	183.62	187.68	163.61	172.66	178.63
	$N = 22$	$N = 26$	$N = 27$	$N = 29$	$N = 28$	$N = 32$	$N = 40$	$N = 40$	$N = 44$	$N = 73$	$N = 68$	$N = 66$
4th Grade	199.92	202.38	204.44	197.86	202.11	205.68	192.89	198.00	203.92	187.37	193.60	200.33
	$N = 26$	$N = 26$	$N = 26$	$N = 28$	$N = 27$	$N = 28$	$N = 39$	$N = 45$	$N = 40$	$N = 42$	$N = 43$	$N = 42$
5th Grade	207.68	210.73	214.30	207.41	213.00	212.65	199.56	208.30	210.52	200.14	205.15	208.71
	$N = 34$	$N = 33$	$N = 33$	$N = 24$	$N = 25$	$N = 25$	$N = 27$	$N = 27$	$N = 29$	$N = 37$	$N = 36$	$N = 41$
6th Grade	208.46	212.85	215.04	214.88	218.85	223.59	211.67	216.54	221.84	210.00	217.65	219.17
	$N = 25$	$N = 26$	$N = 27$	$N = 26$	$N = 27$	$N = 27$	$N = 29$	$N = 30$	$N = 28$	$N = 24$	$N = 23$	$N = 23$

Table 5.4. *Year-to-Year Average MAP Student Growth*

Year	Average Per Student Reading Growth	Average Per Student Mathematics Growth
2013-2014	7.89	10.43
2014-2015	8.47	12.79
2015-2016	13.51	14.31
2016-2017	11.38	14.31

Notes. 2013-2014: N = 163; 2014-2015: N = 169; 2015-2016: N = 181; 2016-2017 N = 185

After analyzing the data and noticing the large increase in average student growth, school administrators were consulted about the reading and math increases and for any changes in curriculum or instructional practices during this time. Fairway adopted a new reading curriculum beginning in the 2015-2016 school year, McGraw-Hill Reading Wonders, which showed a large increase in average student growth from the previous year. In reference to the math curriculum changes, the school adopted a new math curriculum, Pearson's EnVision Math, halfway into the 2014-2015 school year, when MAP scores indicate a gradual increase in average student growth, until it levels off at 14.31 points for the 2015-2016 and 2016-2017 school years. This highlights the dedication Fairway Elementary has to ensuring their students receive a complete curriculum of each subject appropriate to their needs and guaranteeing teachers have adequate, up-to-date resources for instruction.

Chapter Six: Conclusion

Strategies for Success

Fairway Elementary made many changes to their academic programs, extra-curricular activities, and support programs, all of which contribute to their success in recent years. Through interviewing school leaders, teachers, support staff, and students, five overarching themes emerged regarding the success of Fairway Elementary School: (1) a well-organized intervention system, (2) a focus on and overall enjoyment of the discipline of mathematics, (3) involvement of parents in school functions, (4) transparency of needs and organization of resources, and (5) an overall school culture that is competitive, impactful, and student-centered. The intervention system is broken into three tiers: Tier 1- Identification, where students are categorized by achievement and identified early for special support or services, Tier 2- Intervention outside of the traditional classroom, where students are placed into a math and/or reading intervention group with a supplemental staff member or non-classroom teacher (e.g. librarian, gym teacher), and Tier 3- One-on-one instruction, where students receive individual attention and are often tested and referred for special education services. Fairway's administrators also focused on mathematics and replaced their patchwork mathematics curriculum with a common-core standard aligned program with textbooks and online resources for teachers, students, and parents.

Fairway has not only involved parents in curriculum but has involved the entire community in school-wide events, such as the Thanksgiving dinner and popular sporting events, which often pack the gymnasium. School staff has also gotten creative in communication efforts with parents, a need found necessary when families move often

and have unreliable phone service, with social media and instant-message systems through Class Dojo. The community's retail stores and organizations, such as the Freemasons, have also gotten involved in the school by donating school supplies, clothes, and sending backpacks full of necessities for students and their families home on the weekends. Of course, this would not be possible if the school was not transparent about the needs they have to provide students with a quality education. Principal Thomas mentioned several times they are not shy when asking for help or letting the community know what their students and staff need to do their job. In all, this contributes to the school culture, which can be described as caring. The community and school cares about the well-being of students and their families, as well as their academic success. The entire school has a competitive spirit, not with one another, but working together to compete to be the best the school has ever been. Principal Thomas has facilitated this competitive spirit through his excitement and overall efforts to get students involved in both academics and extracurricular activities.

Trends in MAP Scores

Although there was not statistical significance when comparing consecutive seasons MAP scores, there were noteworthy gains when looking at year-long student growth mean. There was an over five-point jump in mean growth score for reading in the 2015-2016 academic year, the year Fairway adopted the McGraw-Hill Reading Wonders curriculum schoolwide. There was also a significant increase in mean math growth per student, increasing almost four points over a two-year span after adopting Pearson's EnVision Math curriculum. Both the math and reading curriculum replaced self-made curriculum developed by individual teachers within Fairway Elementary. This ensured all

teachers have adequate, up-to-date, standard-aligned curricula to use in their classrooms. It also increased school-wide consistency and simplified the data collection process, as data is automatically collected through the online platforms of each program.

Limitations

One limitation of this study includes the lack of direct observation of teachers and students at Fairway Elementary School, thus self-reported data about pedagogy and use of curricula were collected through interviews. Also, direct growth in MAP scores by student was unobservable because of high movement of students into and out of the school population, creating a number of "holes" in the data. These holes in the data caused there to be a smaller than desired number of scores to use to find mean scores and mean growth scores from season-to-season and year-to-year. There was also a large gap in the literature of rural, low-income schools with a majority of white students. Many studies highlight school success in schools with one similar attribute (e.g. rural, small, elementary, low-income), but there was a large gap in finding current research of school with more than one commonality. It is my hope this research will begin the discussion to fill this gap.

Final Remarks

FES has persevered through remarkable odds to be the highest performing elementary school in its district. Their efforts have established a competitive nature among *all* of their stakeholders that keeps their motivation high. While every school is different, FES has found a recipe for success that other administrators and school personnel can learn from. Their intervention system, transparency of resources, stakeholder involvement, reading and mathematics curriculum, and focus on using data to

inform decision making are all embedded into a much larger picture of school culture. Mr. Lyle describes the culture by saying, “it’s not just our test scores, the fact we went from school of crisis to distinguished...it’s successful because our atmosphere is not just our school – our students know we care about them. The staff – and that includes administration down to cooks and janitors, to aids, teachers, and even our volunteers...the kids know they’re taken care of. They know we’ll take care of them no matter what and we’re teaching them what they need to know.” Principal Thomas agrees, saying “That’s one of our secrets here...even for kids poverty stricken we have here, they need us...Drive it in them and instill in them that relationship; Know more about them than their test grade; Know about them outside of school.” That spirit and pride for a school and community is the change that this school needed when they were in crisis mode merely eight years ago.

Appendix: Interview Protocol

Questions for Faculty (Individuals):
Demographic/Personal Questions:

1) What grade do you teach?
2) What is your teaching Rank?
3) Where/How were you certified to teach?
4) How long have you been teaching? How long at FLES? All the same grade level?
    a) If at FLES more than 5 years –
        i) What changes have you observed during your time at FLES?
5) Do you live in or around Flat Lick? For how long? Lived in KY?
6) Did you attend K-12 school in Knox County? FLES?

Teacher-Specific Questions:

7) What subject do you think the easiest to teach? Most challenging? (Why for each?)
    a) What would make the most challenging course easier for you?
8) What do you do for students falling behind grade level?
9) What do you do for students who are at advanced levels and learn faster?
10) What percentage of the students in the school would you say that you know by name?
    a) Less than 25%?
    b) 25-50%?
    c) 50-75%?
    d) More than 75%?
11) What percentage of students would you say know you by name?
12) How do you engage parents/families in the learning process?

School Questions:

13) Do you think FLES is a successful school? (Why? Why not?)
14) Who is your greatest resources at FLES? (Elaborate)
15) In what ways does FLES administration hold teachers accountable for teaching content standards?
16) How involved is the administration in your day-to-day work?
17) Is there anything your administration could do that would make your job easier? (Do they make it harder?)

One Word to Describe:

18) Use one word/phrase to describe the following (about FLES):
    a) School
    b) Administration
    c) Students
    d) Parents
    e) Community

Questions for Faculty (Focus Groups):

31) What are some tangible items that you have available that help you succeed in the classroom?

a) What technology resources are available for you to use? (Chromebooks)
b) How do you use them in your classroom?
c) Is there anything that would enhance your use of these materials?

32) What are some tangible items that you would like to have available that you don't have?
33) To what degree are parents/guardians involved in your school?
34) In what ways do you use student data to make decisions?
35) What whole-group professional development does faculty/staff/administration regularly take part in?
    a) Do you have PD requests that you'd like to see?
36) To what extent does FLES receive support from the community?

Questions for Staff/Administration (Individuals):
Demographic/Personal Questions:

19) Were you formerly a teacher? (What grades/rank?)
20) Where/How were you certified to teach? Admin certification?
21) How long at FLES?
22) Do you live in or around Flat Lick? For how long? Lived in KY?
23) Did you attend K-12 school in Knox County? FLES?

Individual-Specific Questions:

24) What subject do you think the easiest to teach? Most challenging? (Why for each?)
    a) What would make the most challenging course easier for you?
25) What would you recommend a teacher do for students falling behind grade level?
26) What would you recommend a teacher do for students who are at advanced levels and learn faster?
27) What percentage of the students in the school would you say that all of the teachers by name?
    a) Less than 25%?
    b) 25-50%?
    c) 50-75%?
    d) More than 75%?
28) What percentage do you think know you by name?
29) How do you engage parents/families in the learning process?
30) Talk about your SBDM:
    a) How was the committee formed?
    b) How involved are they in school activities?
    c) How often do they meet?

School Questions:

31) Do you think FLES is a successful school? (Why? Why not?)
32) How do you use student data to make decisions?
33) Who is your greatest resources at FLES? (Elaborate)
34) In what way do you hold teachers accountable for teaching content standards?
35) How involved are you in the teachers' day-to-day work?

36) What percentage of students are involved in afterschool activities (sports, extracurricular, etc)
37) Does FLES host events outside of school hours?
    a) Parent-Teacher nights?
    b) Science Night?
    c) Math Night?
    d) Reading Clubs?
38) If yes above, how successful were they? How many attended?

One Word to Describe:
39) Use one word/phrase to describe the following (about FLES):
    a) School
    b) Administration
    c) Students
    d) Parents
    e) Community

Questions for Students:
1) Do you like going to school?
2) What's your favorite part about school?
    a) If not a subject, what is their favorite subject?
3) What's the hardest part about school?
    a) If not a subject, what is their hardest subject?
4) How does your teacher help you learn?
5) How do your parents help you learn?
6) Does your teacher help with things other than learning?
7) What makes you try hard at school?
8) (5th-6th Graders only): What changes have you noticed at FLES since you started?
9) How often do you use Chromebooks in your classes?
    a) What classes? What are you doing with them?
    b) Do you have fun in class when you use them?
10) Have you gone on field trips at school?
    a) Which one was your favorite? What did you learn?
    b) Which was your least favorite? Why?
11) Do you remember if you've had visitors to your school? What do you remember about them? Did they teach you something?

References

Barley, Z. A., & Beesley, A. D. (2007). Rural school success: What can we learn. *Journal of Research in Rural Education*, *22*(1), 1-16.

Bower, H., & Griffin, D. (2011). Can the Epstein model of parental involvement work in a high-minority, high-poverty elementary school? A case study. *Professional School Counseling*, *15*(2), 77-87.

Brown, G. (2016). Leadership's Influence: A Case Study of an Elementary Principal's Indirect Impact on Student Achievement. *Education*, *137*(1), 101-115.

Butterworth, B., & Weinstein, R. S. (1996). Enhancing motivational opportunity in elementary schooling: A case study of the ecology of principal leadership. *The Elementary School Journal*, 57-80.

Cooper, J. E., Ponder, G., Merritt, S., & Matthews, C. (2005). High-performing high schools: Patterns of success. *NASSP Bulletin*, *89*(645), 2-23.

Dejarnette, N. K. (2016). America's children: Providing early exposure to stem (science, technology, engineering, and math) initiatives. Reading Improvement, 53(4), 181-187.

DeLong, S. E. (2007). *A study of the relationship between the utilization of NWEA MAP testing and student achievement*. Indiana State University.

Donhost, M. J., & Anfara Jr, V. A. (2010). Data-driven decision making. *Middle School Journal*, *42*(2), 56-63.

Education Trust. (1999). *Dispelling the myth: High poverty schools exceeding expectations.* Washington, DC: Author.

Howley, C. (1994). The Academic Effectiveness of Small-Scale Schooling (An Update). ERIC Digest.

Ingram, M., Wolfe, R. B., & Lieberman, J. M. (2007). The role of parents in high-achieving schools serving low-income, at-risk populations. *Education and Urban Society*, *39*(4), 479-497.

Kannapel, P. J., & Clements, S. K. (2005). *Inside the black box of high-performing high-poverty schools: A report from the Prichard Committee for Academic Excellence.* Lexington, KY: Prichard Committee for Academic Excellence. Retrieved October 1, 2016, from http://people.uncw.edu/kozloffm/highperforminghighpoverty.pdf

Kearney, W. S., Herrington, D. E., & Aguilar, D. V. (2012). Beating the odds: Exploring the 90/90/90 phenomenon. *Equity & Excellence in Education*, *45*(2), 239-249. doi: 10.1080/10665684.2012.661248

Kitts, A. S. (2011). *The Relationship of Student Achievement and Level of Teacher Certification: A Quanitiative Study*(Doctoral dissertation, Northcentral University).

Lee, P., & Bierman, K. L. (2015). Classroom and teacher support in kindergarten: Associations with the behavioral and academic adjustment of low-income students. *Merrill-Palmer Quarterly*, *61*(3), 383-411.

MAP Growth: Precisely measure student growth and performance. (2018). Retrieved January 02, 2018, from https://www.nwea.org/map-growth/

Martin, M., Fergus, E., & Noguera, P. (2010). Responding to the needs of the whole child: A case study of a high-performing elementary school for immigrant children. *Reading & Writing Quarterly*, *26*(3), 195-222, doi: 10.1080/10573561003769582

McLeskey, J., Waldron, N. L., & Redd, L. (2012). A Case Study of a Highly Effective, Inclusive Elementary School. *The Journal of Special Education, 48*(1), 59-70. doi:10.1177/0022466912440455

Merriam, S. B. (2009). Qualitative research: A guide to design and implementation. San Francisco: John Wiley & Sons.

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards*. Washington, DC: Authors.

Pane, J. F., Steiner, E. D., Baird, M. D., & Hamilton, L. S. (2015). Continued Progress: Promises Evidence on Personalized Learning. *RAND Corporation*.

Shen, J., Cooley, V. E., Reeves, P., Burt, W. L., Ryan, L., Rainey, J. M., & Yuan, W. (2010). Using data for decision-making: Perspectives from 16 principals in Michigan, USA. *International Review of Education*, *56*(4), 435-456.

Shields, J. (2008). *A comparison of the NWEA measures of academic progress and the Missouri Assessment Program*. University of Missouri-Columbia.

Smith, J. G. (2006). Parental involvement in education among low-income families: A case study. *School Community Journal*, *16*(1), 43.

Vierra, R. W. (2014). *Critical thinking: Assessing the relationship with academic achievement and demographic factors* (Doctoral dissertation, University of Minnesota).

Wilkins, Jesse L. M. (2010). Elementary school teachers' attitudes toward different subjects. *The Teacher Educator, 45*(1), 23-36.

Yin, R. K. (1984). *Case study research: Design and methods*. Beverly Hills, Calif: Sage Publications.

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