ISP 2015-002: BEST PRACTICES FROM TRADITIONAL PUBLIC SCHOOLS AND PUBLIC CHARTER SCHOOLS

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Executive Summary

Background

In compliance with state law, the Arkansas Department of Education commissions a yearly evaluation of conversion and open-enrollment charter schools around the state. There have been annual evaluations since the 2005-06 school year through this current report.

As part of our contract with the Charter and Home Schools Office of the Arkansas Department of Education (ADE), we have been asked to additionally study the best practices utilized in Arkansas' schools that may contribute to student academic growth (ISP 2015-002 submitted by Representative Charles Armstrong). While each school in the state encounters a unique set of circumstances, this study hopes to utilize trends between what principals report schools are doing and the school's student academic growth over time.

Understanding common practices that may lead to student learning growth can offer the state valuable opportunities to focus policies that may incentivize these strategies. From this lens, this study aims to increase our knowledge about what schools in the state of Arkansas are doing to improve student academic growth. We analyze practices in the domains of school leadership, school culture, instructional improvement, and college and career readiness and how each relates to improved student achievement.

Results from Prior Best Practices Study: Traditional Public Schools

In 2011, OEP published "Spotlights on Success: Traits and Strategies of Five High-Growth Schools in Arkansas". Based on multiple interviews and observations, we observed four traits that appeared to characterize high-performing schools:

- Visible, supportive, and pro-active leadership
- Autonomous classroom teaching, driven by consistent monitoring of data
- Culture of success and high standards permeate school community
- Collaborative environment for entire school family

Results from Prior Best Practices Study: Public Charter Schools

In compliance with state law, the OEP was commissioned by the Arkansas Department of Education to conduct an evaluation of conversion and open-enrollment charter schools around the state in 2014. As part of this evaluation, we surveyed and interviewed charter school leaders to learn about the school-based practices that they believed were related to school success. In December of 2015, we reported the following findings to the House and Senate Education Committee:

- Flexibility to hire a variety of teacher types
- Flexibility to use additional instructional time
- Charter schools often shifted staff responsibilities to ensure student readiness for post-secondary school opportunities (e.g. ACT prep, college visit, resumes & college essays)
- Opportunities for teacher leadership and parent involvement

Research Questions Driving Current Study

Based on the suggestions from the prior two studies, and on interviews with school leaders in academically-successful traditional public schools around the state, we developed a set of hypotheses around successful schooling that we tested with our statewide survey. The research hypotheses we tested are organized around the following four themes:

1. **School leadership**: What is the relationship between principal leadership styles and student achievement growth? How might opportunities for teacher leadership relate to this student growth?

2. **School culture**: How do schools with high student achievement involve parents at school? What types of practices are used at successful schools to manage student discipline?

3. **Instructional improvement**: What professional development opportunities do teachers access at schools with high student achievement growth? How do these schools utilize instructional coaches? How do teachers use data to improve instruction?

4. **College and career readiness**: What types of post-secondary opportunities do students have at schools with high student achievement?

Our results are based on survey responses – in total, we collected responses from 177 principals, representing about 17% of the schools in the state. These respondents represent schools from across the spectrum of student performance and are representative of the state on student characteristics. Our analyses seek to uncover any relationships between principal-reported practices and actual school performance. We caution that the results found in this study are not causal in nature. We are unable to determine that the practices stated by principals, as compared to other things occurring at the schools, are what are actually responsible for student performance and achievement.

Results from Current Study

School leadership

In this section, we asked about how leadership was shared within the schools. Respondents identified whether the principals served more as leaders or collaborators. Respondents indicated the extent to which teachers were involved in decision-making at the school. We asked about decisions involving curriculum, discipline, classroom management, hiring, and professional development.

> Surprisingly, we found that schools with principals who identify **as a "collaborator" or rely on a leadership team or vice-principal** exhibited **lower** levels of growth in student achievement.

> There is **no relationship between providing teachers with more leadership opportunities** and school student achievement.

School culture

In this section, we asked "How do schools with high student achievement involve parents at school? What types of practices are used at successful schools to manage student discipline?"

> Offering **parents more frequent opportunities to be involved in school activities has a positive** and marginally significant relationship with high student achievement growth.

> There is no clear relationship between specific types of disciplinary practices preferred by principals and student achievement at their schools. We do find that some sets of practices do relate to positive achievement growth, **consistency across staff, staff-student relationships, good instruction, and clear expectations**.

Instructional improvement

In this section, we asked about the professional development opportunities for teachers and about how the schools utilize instructional coaches.

> There **is no relationship between more frequent professional development** activities and student achievement. We also find **no evidence that schools with instructional coaches perform better** than those without them. Lastly, while many schools reported using formative and summative assessments, response to intervention (RTI), grades, disciplinary infractions, student and parent reports, and classroom observation to determine if students are learning, **none of these practices around data have a clear relationship with higher student achievement.**

College and career readiness

For the one-third of our sample who served as high school principals, we asked about the types of post-secondary opportunities provided to high school students.

> Schools with higher student achievement growth focus more on **college readiness** activities over career readiness. In particular, the most popular activities at these schools are **college visits** and **financial aid and scholarship support**.

Introduction

Teachers, administrators, and researchers have been attempting the answer the question of how to best improve the education for students for decades. One can look to systemic changes such as federal accountability or school choice in order to move the needle on student learning. Others focus on what occurs within the school and classrooms, pedagogy, curricula, school culture, to determine what may best help schools improve educational outcomes. This study aims to analyze school-level factors, or best practices, that may result in higher student growth on academic assessments.

What these best practices actually are is unclear. Over the course of history, we have believed the various methods of instruction or school leadership will result in the best learning for students. This study involved the survey of principals across the state to determine what is being done in Arkansas schools to improve student learning. We then used school-level growth in student achievement in math and English language arts to determine what practices successful schools utilized in Arkansas. In particular, we looked at the domains of:

1. **School leadership**: What is the relationship between principal leadership styles and student achievement growth? How might opportunities for teacher leadership relate to this student growth?

2. **School culture**: How do schools with high student achievement involve parents at school? What types of practices are used at successful schools to manage student discipline?

3. **Instructional improvement**: What times of professional development opportunities do teachers access at schools with high student achievement growth? How do these schools utilize instructional coaches? How do teachers use data to improve instruction?

4. **College and career readiness**: What types of post-secondary opportunities do students have at schools with high student achievement?

   To answer these questions, we will start by providing the background for this project and review the literature on what research indicates are the best practices to improve student learning in these domains. We will then explain the data and methodology used for this study followed by the results. Finally, we will discuss the implications that our findings have for best practices utilized in Arkansas schools to increase student achievement growth.

Background

Since the 2005-06 school year, there has been an annual evaluation of Arkansas charter schools, as commissioned by law. The purpose of the annual evaluation is to provide a snapshot of the status of Arkansas charter schools – their academic outcomes and the interest in them.

A research team from the University of Arkansas – Fayetteville, led by Professors Gary Ritter and Patrick Wolf, won the competitive bidding process to perform the evaluation of Arkansas charter schools for the two school years: 2011-12 and 2012-13. Part of the proposed evaluation is a rigorous annual academic evaluation. In 2014, an additional report discussed the practices charter schools implemented that may influence their ability to improve student learning.

As part of our contract with the Charter and Home Schools Office of the Arkansas Department of Education (ADE), we have been asked to additionally study the best practices utilized in Arkansas' schools that may contribute to student academic growth (ISP 2015-002 submitted by Representative Charles Armstrong). While each school in the state encounters a unique set of circumstances, this study hopes to utilize trends between what principals report schools are doing and the school's student academic growth over time.

Understanding common practices that may lead to student learning growth can offer the state valuable opportunities to focus policies that may incentivize these strategies. From this lens, this study aims to increase our knowledge about what schools in the state of Arkansas are doing to improve student academic growth.

Literature Review

In 2014, the University of Arkansas Office for Education Policy (OEP) submitted a report titled Successful Practices of Arkansas' Charter Schools (Ritter, Wolf, & Moore, 2014). The purpose of this report was to show the best practices of public charter schools in Arkansas as a companion to quantitative analysis of student achievement in the schools. From surveys and focus groups, the report found that charter schools offered alternative curricular methods and created programs for specific types of students. In particular, charter schools offered more college and career preparation and focused on the "whole-child." Teachers at charter schools also had more leadership opportunities. Finally, the report found that charters in Arkansas worked to involve parents in the school through special programming and great communication (Ritter, Wolf, & Moore, 2014). This prior research as well as initial interviews conducted for the current report helped guide the focus of this research to the areas of school leadership, school culture, instructional improvement, and college and career readiness.

School Leadership

Leadership styles

Since the 1960's, researchers have tried to make the direct connection between school leadership and student achievement, often finding little correlation.[1] The reality, however, is that the link is not direct between school leadership and student achievement, which is mediated by factors such as poverty as well as student and teacher ability. As researchers improved methods of isolating these effects through statistical controls and quasi-experimental designs, they found small relationships between leadership and student achievement.[2] The question of what leadership type results in improved student achievement remains unclear.

Teacher leadership

Traditionally, only the principal and vice principal in a school were thought to hold leadership formal leadership roles. The last couple of decades have continued to see movement away from traditional leadership structures and look toward the larger school community to take on leadership tasks in schools. For example, distributed leadership refers to the utilization of skills of many, if not all, individuals in a school to accomplish the aggregate leadership tasks.[3] Evidence exists that this type of leadership structure gives teachers more direct influence over the school[4] and provide relief to overloaded

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[1] Hallinger, P., & Heck, R. H. (1996). Reassessing the principal's role in school effectiveness: A review of empirical research, 1980-1995. *Educational administration quarterly*, *32*(1), 5-44.
Sebastian, J., & Allensworth, E. (2012). The Influence of Principal Leadership on Classroom Instruction and Student Learning A Study of Mediated Pathways to Learning. *Educational Administration Quarterly*, *48*(4), 626-663.
[2] Waters, T., Marzano, R. J., & McNulty, B. (2003). Balanced Leadership: What 30 Years of Research Tells Us about the Effect of Leadership on Student Achievement. A Working Paper.
[3] Copland, M. A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. Educational evaluation and policy analysis, 25(4), 375-395.
Day, C., Hopkins, D., Harris, A., & Ahtaridou, E. (2009). The impact of school leadership on pupil outcomes. Final report. Chicago.
Gronn, P. (2002). Distributed leadership as a unit of analysis. The leadership quarterly, 13(4), 423-451.
Harris, A. (2004). Distributed Leadership and School Improvement Leading or Misleading?. Educational Management Administration & Leadership, 32(1), 11-24
[4] Day, C., Hopkins, D., Harris, A., & Ahtaridou, E. (2009). The impact of school leadership on pupil outcomes. Final report. Chicago.

principals, who are taking on new tasks as districts relinquish more control to schools.[5] Furthermore, increases in school capacity for both academic as well as whole school improvement may have positive relationships with student achievement.[6]

School Culture

Parent Involvement

There are many reasons a school may care about parent involvement in school. We may assume that the more parents know about school activities and are involved in them they encourage and support their students with school related issues. Barnard found that Chicago elementary students who had greater involvement also had lower high school dropout rates, higher on-time high school completion, and higher grade completion even when controlling for background characteristics.[7] Several studies found little impact of parent involvement on academic achievement, but significant reductions in behavioral issues.[8] Conversely, Lee and Bowen found that parent involvement in school was associated with higher academic achievement, though this may occur differentially for students of different demographic backgrounds.[9] In particular, we may see parents from different racial or ethnic groups react differently to different types of available activities.[10]

School Discipline

Student disciplinary problems are likely to result in lost time on instruction for teachers and students in the classroom. Furthermore, those poorly behaved students who are removed from the classroom are likely to miss instruction and become detached from the school environment. For this reason, we can hypothesize that a reduction in disciplinary infractions will result in an increase in student learning. In reaction to increasingly levels of suspensions and expulsions in schools as well as zero-tolerance, schools have moved toward schoolwide positive behavior supports.[11] Horner et al. describes schoolwide positive behavior supports as a multi-tiered application of practices that are consistently

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[5] Bush, T. (2013). Distributed Leadership The Model of Choice in the 21st Century. Educational Management Administration & Leadership, 41(5), 543-544.

[6] Heck, R. H., & Hallinger, P. (2009). Assessing the contribution of distributed leadership to school improvement and growth in math achievement. American Educational Research Journal, 46(3), 659-689.

Leithwood, K., & Mascall, B. (2008). Collective leadership effects on student achievement. Educational administration quarterly, 44(4), 529-561.

[7] Barnard, W. M. (2004). Parent involvement in elementary school and educational attainment. *Children and youth services review*, *26*(1), 39-62.

[8] Domina, T. (2005). Leveling the home advantage: Assessing the effectiveness of parental involvement in elementary school. *Sociology of education*, *78*(3), 233-249.

El Nokali, N. E., Bachman, H. J., & Votruba-Drzal, E. (2010). Parent involvement and children's academic and social development in elementary school. *Child development*, *81*(3), 988-1005.

[9] Lee, J. S., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal*, *43*(2), 193-218.

[10] Reynolds, A. D., Crea, T. M., Medina, F. J., Degnan, E., & McRoy, R. (2014). A mixed-methods case study of parent involvement in an urban high school serving minority students. *Urban Education*, 0042085914534272.

[11] Horner, R. H., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A. W., & Esperanza, J. (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behavior support in elementary schools. *Journal of Positive Behavior Interventions*.

Osher, D., Bear, G. G., Sprague, J. R., & Doyle, W. (2010). How can we improve school discipline?. *Educational Researcher*, *39*(1), 48-58.

Skiba, R. J., & Peterson, R. L. (2000). School discipline at a crossroads: From zero tolerance to early response. *Exceptional Children*, *66*(3), 335-346.

implemented through clear expectations that are defined, taught, and rewarded with levels of consequences and constant use of data. Using strategies that may have a preventative and early response approach reduce disciplinary problems and result in better student learning.[12]

Instructional Improvement

Professional Development

In 2015, TNTP (formerly The New Teacher Project) found that districts were spending an average of $18,000 per teacher, per year on professional development.[13] Despite that, they also found little change in teacher practices. What we know is that professional development activities that last longer[14] are likely to have better impacts on students.[15] Recently, there has been increased popularity around professional learning communities (PLCs), which aim to create collaboration and communication between teachers and school staff to improve teacher practice.[16] Prior studies have found that PLCs have the effect of improving teacher collaboration, focus on student learning, and empowerment while also resulting in higher student test scores.

Coaching

Instructional coaches have become an increasingly popular method of improving teacher instruction in schools. Coaches function as a consultant who works with teachers in a collaborative manner to discuss, reflect, and improve teacher practices.[17] In practice, coaching can look very different, and how it is implemented can result in different impacts on students.[18] Another study found that teacher efficacy and teacher reliance on school administrators also played a role in the effects of coaching on student achievement. Nevertheless, the research we do have indicates that good implementation of coaching can positively influence student achievement.

Data-Driven Instruction

Since the inception of No Child Left Behind, schools have been required to keep comprehensive data on student achievement. This created an opportunity for data to play a larger role in how schools and teachers improve. For example, data can be used to modify curricula and instructional practices through

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[12] Horner, R. H., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A. W., & Esperanza, J. (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behavior support in elementary schools. *Journal of Positive Behavior Interventions*.

Skiba, R. J., & Peterson, R. L. (2000). School discipline at a crossroads: From zero tolerance to early response. *Exceptional Children*, *66*(3), 335-346.

[13] TNTP (2015). The mirage: Confronting the hard truth about our quest for teacher development. Washington, DC: Authors.

[14] In a review of literature, studies that looked at professional development that was longer than 14 hours had positive effects on student achievement.

Yoon, K. S., Duncan, T., Lee, S. W. Y., Scarloss, B., & Shapley, K. L. (2007). Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement. Issues & Answers. REL 2007-No. 033.*Regional Educational Laboratory Southwest (NJ1)*.

[15] Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American educational research journal*, *38*(4), 915-945.

[16] Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and teacher education*, *24*(1), 80-91.

[17] Saphier, J., & West, L. (2009). How coaches can maximize student learning. *Phi delta kappan*, *91*(4), 46.

[18] In this study, the first cohort had positive results while the second had no effect. The authors hypothesize that differences in the amount of time coaches spent with teachers and what coaches focused on mediated effects.

Blazar, D., & Kraft, M. A. (2015). Exploring Mechanisms of Effective Teacher Coaching A Tale of Two Cohorts From a Randomized Experiment. *Educational Evaluation and Policy Analysis*, 0162373715579487.

analyzing data at the classroom, subgroup, or individual student level.[19] One study found that high performing schools also used surveys from teachers and community members, exiting seniors, and alumni to inform how schools prepared students for their lives after high school.[20] Many districts and schools also create assessment reports that help in the dissemination to teachers in order to inform future instruction, create and monitor goals, or target at-risk students.[21]

College and Career Readiness

Arkansas' unique career and technical education (CTE) requirement plays an important role in encouraging students to access a variety of applied programs for career training and/or course taking toward college enrollment. Supplemental activities schools provide to students may both increase student post-secondary attainment but also their achievement while in school. College and career counselors likely encourage student achievement in order for students to move into the post-secondary institution of their choice.[22] Even more intensive programs, like the federal Job Corps program, seem to have positive effects on academic achievement.[23] Furthermore, increasing access for students to college and career awareness and development at younger ages is also likely to increase their achievement.[24]

Distinctions of the Current Report

This current report looks specifically at what Arkansas schools are doing in these areas to improve student achievement. We use an aggregated school student-growth model to see the relationship between this growth and the strategies implemented by the schools. All reports of what is occurring in Arkansas schools is from the perspective of the principal.

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[19] Marsh, J. A., Pane, J. F., & Hamilton, L. S. (2006). Making sense of data-driven decision making in education.

[20] Wilcox, K. C., & Angelis, J. I. (2011). High school best practices: Results from cross-case comparisons. *The High School Journal*, *94*(4), 138-153.

[21] Datnow, A., Park, V., & Wohlstetter, P. (2007). Achieving with data: How high-performing school systems use data to improve instruction for elementary students.
Fryer, R. G. (2014). Injecting charter school best practices into traditional public schools: Evidence from field experiments. *The Quarterly Journal of Economics*, *129*(3), 1355-1407.

[22] Hooley, T., Marriott, J., & Sampson, J. P. (2011). Fostering college and career readiness: How career development activities in schools impact on graduation rates and students' life success. *UK: University of Derby*.

[23] Glazerman, S., Schochet, P., & Burghardt, J. (2000). National Job Corps Study: The Impacts of Job Corps on Participants' Literacy Skills. *Princeton, NJ: Mathematica Policy Research, Inc*.

[24] Hooley, T., Marriott, J., & Sampson, J. P. (2011). Fostering college and career readiness: How career development activities in schools impact on graduation rates and students' life success. *UK: University of Derby*.

Data

Preliminary interviews were conducted with eight *high-academic-growth* elementary, middle, and high school traditional public school principals utilizing similar protocols to those we used with charter schools several months earlier. In these interviews, we were seeking to learn about what successful practices have been implemented to improve student learning in their schools.

Based on these interviews, we built a survey to address practices that occur at school in the areas of academic curriculum/programs, school culture, professional development, and principal leadership. This survey protocol was vetted by several school leaders for coherence and ease of use. The survey was then accepted and approved by our University Institutional Review Board.

Surveys were sent to 1,046 Arkansas school principals. A two week window was allotted, and then subsequent e-mails were sent to all non-respondents. A random sample of just over 100 non-respondents at the top, middle, and bottom of the academic growth distribution were contacted by telephone to ensure representation at all levels. In total, 177 surveys were collected, accounting for about 17% of all principals in Arkansas.

Additionally, school-level test score growth was calculated based on student benchmark and end-of-course exams. Two different value added models are considered, with both one and two prior years of test score data. We consider both models when we interpret our results. Demographic characteristics for the schools was also collected from the Office for Education Policy Arkansas schools database.

Sample Description

As not all principals in the state responded to our survey, it is important to know how this sample compares to the state as a whole to ensure representativeness. We compare school characteristics in all schools in the state to those in our sample in Table 1. Differences between our sample and the state as a whole are minimal, though along key variables. Our sample has fewer students with free or reduced price lunch status, more white students, and fewer black students. For this reason, it is important to control for these factors in our models.

Table 1. Baseline Equivalency between Survey Sample and State Population

	Sample	Arkansas	Difference	
VAM	0.11	-0.02	0.13	
Enrollment	454.3	445.7	8.61	
Special Programs				
% GE	9.9%	9.0%	0.9%	
% SPED	11.4%	12.1%	-0.7%	
% LEP	6.6%	6.4%	0.2%	
% FRL	61.2%	65.0%	-3.9%	***
Race				
White	69.3%	64.0%	5.2%	**
Black	15.9%	21.7%	-5.9%	***
Hispanic	10.3%	10.0%	0.3%	
Other	4.5%	4.2%	0.3%	
Region				
NWA	32.9%	32.3%	0.7%	
Northeast	24.6%	20.7%	3.9%	
Central	23.4%	28.4%	-5.0%	
Southwest	11.4%	12.2%	-0.9%	
Southeast	7.8%	6.4%	1.4%	
Grade Level				
Elementary	50.9%	55.1%	-4.2%	
Middle	16.2%	16.9%	-0.7%	
High	33.5%	27.5%	6.1%	*

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Note: Averages are weighted by school enrollment.

We further investigate our sample along the distribution of value-added scores. Table 2 shows that our sample of respondents in the Northeastern portion of the state have higher scores than the average school in that region. Similarly, the high school principals who responded work at schools with higher student achievement growth than most high schools in the state. For the purposes of generalizing our findings to the rest of the state, we may have some concerns given these issues even with proper controls. It also should not be overlooked that our sample is also only a small proportion of the state's schools. It is important to be cautious in extrapolating finding from this sample.

Table 2. Sample Distribution by Value Added Scores

	Sample	Arkansas	Difference	
Regions				
NWA	0.35	0.16	-0.19	
Northeast	0.15	-0.21	0.36	**
Central	-0.07	-0.05	-0.02	
Southwest	0.13	-0.09	0.22	
Southeast	-0.50	0.14	-0.64	
Grade Level				
Elementary	0.04	0.08	-0.05	
Middle	0.17	-0.02	0.20	
High	0.19	-0.22	0.41	**

*** p<0.01, ** p<0.05, * p<0.1

Methods

Our survey was designed with specific domains in mind based on initial interviews with high achieving schools in the state. Sets of questions then fit into each domain and attempt to address a few aspects that may highlight strategies employed by effective schools.

School Leadership

Principal Leadership

The first domain addresses types of leadership. Principals were asked what percent of the time they utilized various leadership styles. Table 3 describes the responses principals gave us in the first column, "Percent of Time." The second column identifies the type of leadership style principals identified with the most. School leaders were defined as those who made decisions on their own and teachers followed their directions. School leader with input is a principal who takes other's recommendations into account when making decisions. We see that principals utilized this leadership style more often than the others. Collaborators utilize a leadership and/or vice-principal for decision making, and Table 3 shows that more principals identified the most with this leadership type. Finally, facilitators allow teachers at the school to make decisions about the school. While many principals seem to spend time as a facilitator, it is not what they identify with the most.

Table 3. Description of Principal Responses to Percent of Time as Leadership Type

	Percent of Time	ID's w/Most
School Leader	21.5%	17.3%
School Leader w/Input	**31.9%**	26.7%
Collaborator	25.4%	**32.4%**
Facilitator	20.0%	12.8%
Other	1.2%	5.6%

Teacher Leadership

Along with identifying the type of leader they are as a principal, respondents also answered questions about which parties make different decisions in the school. When considering curriculum, discipline, classroom management, hiring, and professional development, principals said that they were involved in about 70% of decisions made. Teachers were involved in almost 60% and the district less than 50%. Principals were also asked about who makes curricular decisions at the school. They identified teachers as most often making these decisions, but that they were only responsible for making these decisions less than 2% of the time. It is quite possible that it is socially undesirable for principals to report that they choose curricula in place of teachers, biasing our results somewhat.

Table 4. Distribution of Decision Making across Roles

	All Areas	**Curriculum**
Principal	69.9%	1.5%
Teacher	58.3%	53.3%
District	45.5%	33.6%
Other	6.6%	11.7%

We also chose to analyze how many parties had input into the decisions made in schools. Principals were able to select whether teachers, principals, and/or the district made each type of decision. We consider each area as only a school level decision or a school and district level decision. Coinciding with our findings in Table 4, we see that curriculum used is more likely to only be made by one decision-making group. Based on the above, it seems safe to say that teachers are likely to be the decision-making group for curriculum. Professional development, on the other hand, is most likely area in which decision-making is shared by at least two parties.

Table 5. Decisions Made at the School and District Levels

	Teacher	**Principal**	**District**	**School Only**	**School-District**
Curriculum Used	0.63	0.49	0.62	0.56	0.58
Disciplinary Consequences	0.39	0.93	0.24	0.66	0.52
Classroom Management	0.88	0.67	0.08	0.67	N/A
Hiring Decisions	0.36	0.90	0.56	0.63	0.61
Professional Development	0.66	0.72	0.76	0.69	0.71

Notes: For columns 4 and 5, a one signifies completely distributed decision making. School only decisions, 0.5 would exist for a unilateral decision. School-district decisions would be 0.33 if unilateral and 0.67 if made by 2 parties.

School Culture

School Discipline

Prior to our main analysis, we were interested to see how schools at different points on the distribution of value added scores responded to questions about school discipline. Principals were asked to choose the three practices they felt most minimized school disciplinary problems. There was quite a lot of consistency across levels of student achievement growth about the types of practices to use. Staff-student relationships, good instruction, and clear expectations were among the most common practices chosen by each. It is interesting to note that close to two-thirds of every low-VAM school chose the same practices. While not causal, we may hypothesize that struggling schools are more likely to implement similar and popular strategies.

Table 6. Most Important Practices to Minimize School Discipline

	Low VAM	Middle VAM	High VAM
Consistency Across Staff	37.1%	46.9%	35.8%
Staff-Student Relationships	**68.6%**	**59.4%**	**71.7%**
Positive Peer Relationships	14.3%	9.4%	11.3%
Engaging Curricula	45.7%	40.6%	28.3%
Good Instruction	**60.0%**	**59.4%**	**54.7%**
Fidelity to Behavior System	14.3%	33.6%	15.1%
Individualized Consequences	17.1%	24.6%	7.5%
Teacher Control of Consequences	2.9%	0.0%	1.9%
Clear Expectations	**71.4%**	**44.0%**	**56.6%**
Teacher PD	5.7%	17.7%	3.8%
Parent Involvement	22.9%	36.9%	36.1%
Adherence to Handbook	17.1%	33.6%	19.2%

Instructional Improvement

Coaches

About 60% of the schools in our sample reported that they have an instructional coach at their school. Because we knew that it was likely to be common for schools to employ a coach, we were interested to consider the actual uses of coaches to help improve teacher practice. Schools of all quality reported that their instructional coaches spent just over 40% of their time working with teachers. Another 50% of their time was split between teacher observation and developing materials. Interestingly, the schools at the middle of the value added distribution indicated that their coaches spent their time doing other tasks. From qualitative data provided by respondents, many of these other tasks were implementing interventions, attending meetings, and teaching classes.

Table 7. How Instructional Coaches use their Time

	Low VAM	Middle VAM	High VAM
Teacher Observation	25.6%	16.9%	20.1%
Working with Teachers	**43.9%**	**40.4%**	**42.6%**
Material Development	22.5%	21.9%	27.5%
Other	8.1%	20.8%	9.9%

College and Career Readiness

Approximately one-third of our sample are high school principals. We asked these principals to specifically respond to a question about college and career activities. Principals were asked to choose three activities that they believe best help students achieve their post-secondary goals. Table 8 displays the initial results of how schools achieving low to high student achievement growth are prioritizing college and career activities. Almost one-third of schools with low student achievement growth chose only one college activity (the two other were thus career focused). Interestingly, schools in the middle of the distribution omitted career activities entirely. It may be the case the schools that are on the "bubble" of being at the top in student achievement attempt to push certain initiatives harder that they believe will improve learning. Nevertheless, schools that seem to improve student achievement the best divide their opportunities for students a bit more evenly. We may be able to hypothesize that relevant post-secondary activities based on the students goals is what helps keep them motivated to achieve academically.

Table 8. Number of College-Going Activities to Reach Post-Secondary Goals

# of College Activities	Low VAM	Middle VAM	High VAM
1	30.0%	0.0%	16.7%
2	50.0%	12.5%	38.9%
3	20.0%	87.5%	44.4%

Results

This section details the findings of our primary analyses in the areas described above.

School Leadership

Leadership Styles

Previously, we saw that leader's spent the most time as a leader with input and most identified most with being a collaborator with a leadership team. In our multivariate analyses (Table 9), we see that the popular practice of most often acting as a collaborator relates to lower student achievement growth. These results are in relation to principals who identify as most authoritarian. We may be able to consider a few explanations for these results. First, the use of leadership teams and enabling small groups of teachers to have input in decision making may result in the best teachers at the school exerting massive efforts to help with the administration of the school rather than teaching. Secondly, it may also create envy from other teachers, resulting in a dissatisfied group of teachers. Lastly, having all teachers' voices heard reduces this jealousy and the administrative tasks one teacher may take on to support the whole school.

Table 9. Relationship between Percent of Time as Leadership Types on VAM

	No Controls	**School Controls**	**Full Controls**
Leader w/Input	-0.241	-0.286	-0.194
Collaborator	**-0.663****	**-0.682****	**-0.813****
Facilitator	0.729*	0.415	0.489
Other Leader	0.280	0.391	0.605*
Observations	87	87	87

*** p<0.01, ** p<0.05, * p<0.1

Teacher Leadership

When considering decision making, we might expect to see that certain types of decisions that are made more locally, within the school, have positive relationship with student growth. We see in Table 10 that there does not seem to be any association between the different types of decisions that are made within the school and how local the decision making process occurs. Unfortunately, are results for these domains are based on a very small sample of responses across the five domains. Other specifications utilized with a larger portion of the sample similarly showed null results for the relationship between student achievement and the amount of local control of decision making.

Table 10. Relationship between Local Decision Making and VAM

	No Controls	**School Controls**	**Full Controls**
Curriculum	0.037	0.068	-0.064
Discipline	-0.053	-0.071	-0.130
Classroom Management	0.218	0.111	0.028
Hiring	0.152	0.194	0.055
Professional Development	0.042	0.040	0.163
Observations	48	48	48

*** $p<0.01$, ** $p<0.05$, * $p<0.1$*

Curricular decisions may be an important way that principals empower teachers. Both Table 10 and Table 11 demonstrate that giving teachers, or any party in particular, control over curricula has no significant effect on student achievement growth. Principals were also asked about the types of leadership opportunities they make available to teachers at their school. We analyzed how the number of opportunities made available to teachers may relate to higher student achievement growth. We do not see the any evidence that offering more leadership opportunities is associated to student growth.

Table 11. Relationship between Curricular Decision Maker and VAM

	No Controls	**School Controls**	**Full Controls**
Teachers	0.230	0.128	0.190
Principals	-0.992	-0.992	-0.911
Other	0.447	0.536*	0.462
Observations	121	121	121

*** $p<0.01$, ** $p<0.05$, * $p<0.1$*

Table 7. Relationship between Number of Leadership Opportunities for Teachers and VAM

	No Controls	**School Controls**	**Full Controls**
Leadership Opportunities	0.0231	-0.00880	-0.0147
Observations	149	149	149

*** $p<0.01$, ** $p<0.05$, * $p<0.1$*

School Culture

Parent Involvement

Our surveys asked principals about the frequency of activities made available to parents. We utilized the results to create a parent involvement construct. The results from these questions (Table 13) demonstrate the importance of offering parents opportunities to be a part of the school community. The more frequently schools offer activities that can involve parents relates to higher student achievement growth. Results for this measure are only statistically significant at a marginal level, which warrants caution in the weight given to these results being actually different from zero.

Table 8. Relationship between Number of Parent Involvement Activities and VAM

	No Controls	**School Controls**	**Full Controls**
Parent Involvement	0.616**	0.540*	0.521*
Observations	122	122	122

*** p<0.01, ** p<0.05, * p<0.1*

School Discipline

School discipline, as previously mentioned can play a very large role in the ability of schools to support student learning. There does not seem to be a relationship between schools that chose a disciplinary practice as one of the three most important and increases in student achievement growth. There seems to be a possible relationship between the use of clear expectations and decreases in student growth, but this effect disappears when we consider all school and student level controls, which are important to reduce bias in our results.

Table 9. Relationship between what Principals Feel Minimizes School Discipline and VAM

	No Controls	School Controls	Full Controls
Consistency Across Staff	0.073	0.165	0.200
Staff-Student Relationships	0.225	0.180	0.108
Positive Peer Relationships	-0.044	-0.075	0.016
Engaging Curricula	-0.398*	-0.293	-0.342
Good Instruction	-0.080	-0.176	-0.173
Fidelity to Behavior System	-0.016	0.032	0.077
Individualized Consequences	-0.389	- 0.319	-0.476
Teacher Control of Consequences	0.307	0.698	0.818
Clear Expectations	-0.460**	-0.405**	-0.239
Teacher PD	-0.058	-0.271	-0.153
Observations	120	120	120

*** p<0.01, ** p<0.05, * p<0.1*

When considering the term "best practices," we might think of what schools do as a package of practices, not just singular strategies. For this reason, Table 15 considers the groupings of disciplinary practices to see if there are any patterns in these groups and improved achievement. Each combination in the table is positively related to student achievement growth. Three columns in particular are bolded because they include a larger number of schools that had this grouping in common making them somewhat more reliable results. Between these three columns, we see that consistency across staff, staff-student relationships, good instruction, and clear expectations are all present.

Table 10. Combination of Disciplinary Practices Related to Increases in VAM

	Best Practices in Discipline																							
Consistency across staff													X	X	X	X	X	X	X		X	**X**	X	X
Staff-Student Relationships						**X**	X	X	X	X	X									X	X	**X**	X	X
Positive Peer Relationships							X			X	X	X					X	X						
Engaging Curricula				**X**	X			X	X			X			X	X								X
Good Instruction		X	X	X	**X**	X		**X**			X			X										
Fidelity to Behavior System			X		X				X					X	X		X		X					
Individualized Consequences	X			X																				
Teacher Control of Consequences																							X	
Clear Expectations	X	X	X		**X**			X	**X**			X			X				X				**X**	
Teacher PD																					X			
Parent Involvement			X						X											X				
Adherence to Handbook	X							X								X								
Number of Schools	1	1	1	1	7	1	1	18	2	3	1	1	3	1	1	1	1	1	1	1	1	13	1	3

Instructional Improvement

Professional Development

Professional development was evaluated in a similar manner to parent involvement. Principals indicated the frequency that teachers were offered various opportunities for professional development. The responses to these questions was used to create a construct. We see, in Table 16, that there is no relationship between the frequency of professional development opportunities and student growth. The size of the coefficients, even if they were statistically significant, are quite small, and they would likely require large amounts of money to increase the frequency of opportunities to teachers.

Table 11. Relationship between Number of Professional Development Opportunities and VAM

	No Controls	School Controls	Full Controls
PD Activities	0.0338	0.0804	-0.0600
Observations	113	113	113

*** *p<0.01, ** p<0.05, * p<0.1*

Coaching

Coaches, as mentioned, are present at about 60% of the schools that responded to the survey. We used an indicator for whether a school had a coach to analyze the possible relationship a coach may have to student achievement. The results in Table 17, however, show that the presence of an instructional coach has no relationship with student achievement growth. Looking at the specific tasks of coaches (Table 18), we see no indication that any particular use of time by coaches is associated with student improvement.

Table 12. Relationship between Instructional Coach and VAM

	No Controls	School Controls	Full Controls
Coach at School	0.0858	0.165	0.0414
Observations	121	121	121

*** *p<0.01, ** p<0.05, * p<0.1*

Table 18. Percent of Time Coaches Spent on Tasks and VAM

	No Controls	School Controls	Full Controls
Work with Teachers	0.884	1.269	0.933
Develop Materials	1.364	1.364	1.039
Other	1.031	0.712	0.454
Observations	69	69	69

*** *p<0.01, ** p<0.05, * p<0.1*

Data-Driven Instruction

Within surveys completed, principals had the opportunity to describe, in their own words, what differentiated instruction looks like at their school. We utilized this qualitative data to code responses and determine if there is a relationship between schools that use different practices in differentiated instruction and their student achievement growth. Across the activities shown in Table 19, small groups, strength-based activities, using technology or other modifications to assignments, and using formative assessment, we see no relationship between these practices and student growth.

Table 19. Relationship between Types of Differentiation and VAM

	No Controls	**School Controls**	**Full Controls**
Small Groups	-0.0191	0.0566	0.0874
Strength-Based	-0.162	-0.289	-0.310
Technology or other Modifications	-0.363	-0.198	-0.260
Use of Formative Assessment	0.442	0.416	0.402
Observations	125	125	125

*** p<0.01, ** p<0.05, * p<0.1

Similarly, principals were asked how teachers know what they are doing helps students learn. Again, short answers were coded and analyzed as they relate to improvement in achievement. We again do not see that any of the practices that teachers are doing to monitor student improvement has a statistically significant relationship to student achievement growth.

Table 20. Relationship between Types of Data Used and VAM

	No Controls	**School Controls**	**Full Controls**
Formative Assessment	-0.300	-0.222	-0.288
Summative Assessment	0.104	0.151	0.273
RTI	0.384	0.214	0.306
Non-Cognitive Measures	-0.084	-0.157	-0.191
Student Work	0.275	0.173	0.018
Observations	156	156	156

*** p<0.01, ** p<0.05, * p<0.1

College and Career Readiness

We saw descriptively that high schools lower on the distribution of VAM focused less on college activities. To support those statistics, Table 20 shows that there is a marginally significant relationship between a high school having a college focus and increases in student achievement. While career focused schools indicate they may have a negative relationship with achievement, the number of schools that have his focus is likely too small to result in statistical significance. These results are unsurprising given the reality that students need better test scores and higher grades to go to college. Without this incentive, we may not expect students to work toward academic achievement as well as teacher belief in the importance of academics for their students' success. Table 21 gives us a more detailed looked at the combination of activities that high schools with improved student achievement consider important. College visits and financial aid and scholarship support are the most commonly chosen activities, supporting the results of the influence of a school's college focus.

Table 21. Priority of College or Career and Relationship with VAM

	No Controls	School Controls	Full Controls
College Focus	0.337	0.424	0.570*
Career Focus	-0.349	-0.470	-0.541
Observations	36	36	36

*** p<0.01, ** p<0.05, * p<0.1*

Table 22. College and Career Activities and Relationship with VAM

	Best Practices in College and Career Readiness					
College Visits				X	X	X
College Advising			X			X
Apprenticeships						
College Entrance Exam Prep					X	
College Fairs		X		X		
Career Fairs		X				
Internships			X			
College Entrance Essay Support	X					
Financial Aid/Scholarship Assistance	X			X	X	X
AP/IB Classes	X		X			
Resume Building/Editing						
Career Interest Surveys		X				
Number of Schools	1	2	2	2	3	3

Conclusion

This evaluation sought to complement the exhaustive overview of the academic impacts of the 3-Year Matching study of Arkansas charter schools for the 2011-12 to 2013-14 school years. To supplement our analysis of Arkansas charter schools, the Office for Education Policy conducted surveys and analyses of best practices used in Arkansas schools. The prior discussion evaluating several domains of best practices enlightened our understanding about what is happening in Arkansas schools and how those practices are helping students learn.

Specifically, we found that collaborative leadership practices, while quite popular in many schools, appears to be present in schools with lower student achievement growth. Nevertheless, involving parents in the school community so that they too may be able to have a voice has a slight relationship with positive achievement growth.

While there may also be slight indications that sets of school discipline activities and a high schools college focus can positively relate to student improvement, practices, such as local decision making, leadership opportunities for teachers, use of data and tracking student progress, and coaching and professional development, have no relationship at all with student achievement.

The reality is that each school is incredibly unique in mission, culture, facilities, staff, resources, and students. All of these factors, along with each individual practice implemented by teachers and the school as a whole, make up what is special about each school. It is nearly impossible to isolate individual activities that could be implemented at a totally different school in the same manner and with the same effectiveness. For this reason, it is typically difficult to find individual practices that relate to student achievement.

Finally, we must caution that the results found are not causal in nature. We are unable to determine that the practices stated by principals are what are actually responsible for changes in test scores. Self-reports from surveys induce bias as a result of socially desirable response patterns. Moreover, principal reports occurred following the most recent assessments results utilized. Lastly, we know that our sample is only a small portion of all of Arkansas' principals, representing less than 20% of schools in the state. It is important to note that our results can only be applied to the schools that actually responded to the survey.

Appendix: Copy of Survey Instrument

AR Best Practices Survey

Intro. You are invited to participate in a research study of Arkansas schools' best practices. The state legislator has requested that our team at the University of Arkansas look at the types of practices used in Arkansas schools to support student learning. Your participation in this study will require the completion of this online survey that should take approximately 15 minutes of your time. You do not have to participate in this study if you do not want to. You do not have to answer any question that you do not want to answer for any reason. We will be happy to answer any questions you have about this study. If you have further questions about this project or if you have a research-related problem you may contact me, Gary Ritter at garyr@uark.edu or Patrick Wolf at pwolf@uark.edu. If you have questions or concerns about your rights as a research participant. please contact Ro Windwalker, the University's Compliance Coordinator, at irb@uark.edu or 479-575-2208

The completion of this survey implies your consent to participate. If you choose to participate, please complete the following survey by November 6, 2015. Thank you!

D1 How many years have you been in your current position at this school?

○ 0-2
○ 3-5
○ 6-10
○ 10+

D2 Is your school a high school?

○ Yes
○ No

L1 What percent of time do you use the following leadership styles?

_____ School Leader: Teachers take their cues from my actions and directions.
_____ School Leader with input: I welcome teacher input into what does and does not work.
_____ Co-Leader: I work with my vice principal(s) and/or lead teachers to make decisions.
_____ Facilitator: I look to teachers to make decisions about the school.
_____ Other (please specify)

L2 Who makes the following decisions:

	Teachers	Principal	District	Other
Curriculum used	❏	❏	❏	❏
Disciplinary consequences	❏	❏	❏	❏
Classroom management system	❏	❏	❏	❏
Professional development	❏	❏	❏	❏
Staff hiring	❏	❏	❏	❏

L3 What percent of current teaching staff did you hire?

- ❍ 0-20%
- ❍ 21-40%
- ❍ 41-60%
- ❍ 61-80%
- ❍ 81-100%

L4 What percent of current teaching staff were retained from last school year?

- ❍ 0-20%
- ❍ 21-40%
- ❍ 41-60%
- ❍ 61-80%
- ❍ 81-100%

Q5 Which of the following leadership positions are made available to teachers?

- ❏ Grade level lead
- ❏ Content area lead
- ❏ Instructional coach
- ❏ Athletic Coach
- ❏ Club/Extra Curricular advisor
- ❏ Part-time administrator
- ❏ Other (please specify) _____

C1 How often does your school have...

	Once a year	Once a quarter	Once a month	At least once a week	N/A
Student artistic performances	❍	❍	❍	❍	❍
Parent-Teacher conferences	❍	❍	❍	❍	❍
Family nights	❍	❍	❍	❍	❍
Sporting events on campus	❍	❍	❍	❍	❍
Parent classroom visits	❍	❍	❍	❍	❍
Parent volunteers	❍	❍	❍	❍	❍
Open Houses	❍	❍	❍	❍	❍
Academic activities (ie. spelling bee, science fair, etc.)	❍	❍	❍	❍	❍
Award ceremonies	❍	❍	❍	❍	❍
PTO/PTA meetings	❍	❍	❍	❍	❍
Parent surveys administered	❍	❍	❍	❍	❍

C2 Choose 3 practices you feel are most important to minimizing discipline issues at your school.

- ❑ Consistency across staff
- ❑ Staff-student relationships
- ❑ Positive peer relationships
- ❑ Engaging curricula
- ❑ Good instruction
- ❑ Fidelity to behavior system
- ❑ Individualized consequences
- ❑ Teacher discretion over consequences
- ❑ Clear expectations
- ❑ Teacher professional development
- ❑ Parent involvement
- ❑ Adherence to school handbook

C3 Please select the degree to which you agree or disagree with the following:

	The school discipline policy at my school is based in restorative practices.	Discipline is primarily a classroom based, teacher managed issue.	Students do not fully understand the handbook and discipline policies.	There are explicit positive components to our discipline policies.	I have very little flexibility to interpret and/or implement the student handbook.
Strongly Disagree	○	○	○	○	○
Disagree	○	○	○	○	○
Neither Agree nor Disagree	○	○	○	○	○
Agree	○	○	○	○	○
Strongly Agree	○	○	○	○	○

CP1 How do your teachers use data to inform their instruction?

CP2 How is classroom curriculum primarily determined at your school?

- ○ District mandates
- ○ Teachers create independently
- ○ Horizontal teams create
- ○ Vertical teams create
- ○ I choose programs used
- ○ Student interest drives curriculum
- ○ Other (please specify) _____

Q41 Does your school have an instructional coach (any subject)?

○ Yes
○ No

CP3 Select the percent of time instructional coaches spend doing the following:

_____ Observing teachers
_____ Working with teachers
_____ Developing materials for teachers
_____ Other (please specify)

CP4 Choose 3 activities that are most important to helping students meet their post-secondary goals.

❑ College visits
❑ Individual college advising
❑ Apprenticeships
❑ College entrance exam preparation
❑ College fairs
❑ Career fairs
❑ Internships
❑ College entrance essay support
❑ Financial aid and scholarship assistance
❑ AP/IB classes
❑ Resume building/editing
❑ Career interest surveys

PD1 Please describe how your teachers utilize common planning times.

PD2 How often do teachers have access to the following:

	Once a year	Once a quarter	Once a month	At least once a week	N/A
Principal instructional coaching	○	○	○	○	○
Collaboration with curricular coaches	○	○	○	○	○
On-site professional development	○	○	○	○	○
Professional development through your co-op	○	○	○	○	○
District required professional development	○	○	○	○	○
Teacher led professional development	○	○	○	○	○
Formal evaluation	○	○	○	○	○
Peer observations	○	○	○	○	○
Informal classroom walkthroughs	○	○	○	○	○
Vertical planning time	○	○	○	○	○
Horizontal planning time	○	○	○	○	○
Data interpretation support	○	○	○	○	○

PD3 Please give an example of what instructional differentiation looks like at your school.

PD4 How do you know when what your teachers are doing is working for students?

Q40 Would you like to be included in the Office for Education Policy Advisory Panel?

❑ Yes

Exit Is there anything else you would like to tell us about your school?