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Teacher Shortage as a Local Phenomenon: District Leader Sensemaking, Responses, and Implications for Policy

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Abstract: While the teacher shortage is a national crisis, the manifestations of the shortage are felt most acutely at the local district level. The diversity of these micro-contexts often leads to disparities in the ways local school systems are served by large-scale initiatives. District leaders provide an important lens for understanding the localized manifestation of teacher shortages. This research contributes to the existing macro-level literature on teacher shortages through investigation of the ways in which district leaders in West Virginia make sense of and respond to the teacher shortage. As part of a broader study, we share analyses of interviews with seven district leaders across five county school districts and highlight the ways in which leaders made sense of the phenomenon in paradoxical ways, both in terms of the most salient causes as well as the perceived locus of control in addressing the teacher shortage. Findings also highlight the way district leader sensemaking led to action, with responses differing based on relative affordances of metropolitan versus rural contexts. We conclude with implications for policy and research to further

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understand the local nature of teacher shortages and to address the problem, particularly in rural contexts underserved by current research and policy.

Keywords: teacher shortage; local; rural; qualitative; district leadership; sensemaking

Escasez de docentes como fenómeno local: *Sensemaking* de líderes de distrito, respuestas de políticas e implicaciones

Resumen: Si bien la escasez de docentes es una crisis nacional, las manifestaciones de escasez se sienten con mayor intensidad a nivel de distrito local. La diversidad de estos microconceptos a menudo conduce a disparidades en la forma en que los sistemas escolares locales son atendidos por iniciativas a gran escala. Los líderes del distrito proporcionan una lente importante para comprender la manifestación localizada de la escasez de maestros. Esta investigación contribuye a la literatura existente sobre la escasez de maestros al investigar las formas en que los líderes del distrito en West Virginia entienden y responden a la escasez de maestros. Como parte de un estudio más amplio, compartimos el análisis de entrevistas con siete líderes de distrito en cinco distritos escolares del condado y destacamos formas en que los líderes entendieron el fenómeno paradójicamente, en términos de las causas más destacadas, así como el lugar percibido de control para abordar la escasez de docentes. Los hallazgos también resaltan cómo la *sensemaking* del líder del distrito condujo a la acción, con respuestas diferentes en función de las posibilidades relativas de los contextos metropolitanos versus rurales. Concluimos con implicaciones de política e investigación para una mejor comprensión de la naturaleza local de la escasez de docentes y para abordar el problema, particularmente en contextos rurales no cubiertos por la investigación y la política actual.

Palabras-clave: escasez de docentes; local; rural; cualitativo; liderazgo del distrito; *sensemaking*

Falta de professores como um fenômeno local: *Sensemaking* do líder distrital, respostas e implicações para políticas

Resumo: Embora a escassez de professores seja uma crise nacional, as manifestações da escassez são sentidas mais intensamente no nível do distrito local. A diversidade desses microconceitos frequentemente leva a disparidades na forma como os sistemas escolares locais são atendidos por iniciativas de larga escala. Os líderes distritais fornecem uma lente importante para entender a manifestação localizada da falta de professores. Esta pesquisa contribui para a literatura existente sobre a escassez de professores através da investigação das maneiras pelas quais os líderes distritais em West Virginia compreendem e respondem à escassez de professores. Como parte de um estudo mais amplo, compartilhamos análises de entrevistas com sete líderes distritais em cinco distritos escolares do condado e destacamos as maneiras pelas quais os líderes entenderam o fenômeno de maneira paradoxal, em termos das causas mais salientes e do locus percebido de controle na abordagem da escassez de professores. Os resultados também destacam a forma como o *sensemaking* do líder distrital levou à ação, com as respostas diferindo com base nas affordances relativas dos contextos metropolitanos versus rurais. Concluimos com implicações para a política e a pesquisa para entender melhor a natureza local da escassez de professores e para abordar o problema, particularmente em contextos rurais não atendidos pela pesquisa e pela política atuais.

Palavras-chave: falta de professores; local; rural; qualitativo; liderança distrital; *sensemaking*

Introduction

Widespread teacher shortages have attracted national media attention, with images of unfilled classrooms in underfunded school systems rising to crisis levels in some regions of the U.S. Nationwide reports show acute shortages in certain states, in predominately rural and urban places, and across specific disciplines, including math and special education (Darling-Hammond & Podolsky, 2019; Sutchter, Darling-Hammond, & Carver-Thomas, 2019; Viadero, 2018). Attention to promising macro-level policy responses to curb teacher shortages—both through recruitment and retention—has emerged from recent scholarship (Espinoza, Saunders, Kini, & Darling-Hammond, 2018; Podolsky, Kini, Darling-Hammond, & Bishop, 2019). Recommendations include loan forgiveness programs, competitive compensation, high-retention pathways into teaching, and better working conditions for current teachers.

State-level actions to address teacher shortages, in particular, have risen to the forefront of teacher staffing discourse. In some cases, state policy responses are consistent with scholarly recommendations, such as efforts to “rebrand” the teaching profession (Jackson, 2018), while others, such as decreased standards for teacher preparation and increased use of emergency certifications (Hertnecky, 2018), are not positioned positively in existing literature (Podolsky & Sutchter, 2016). Recent state-level responses have followed teacher labor protests and work stoppages. Resulting salary increases and other investments can be seen as necessary components of statewide efforts to increase recruitment and curb teacher turnover (e.g., Bluefield Daily Telegraph, 2018; Trotter, 2018), though these responses are too new to evaluate.

State-level responses to the teacher shortage are essential, but as local news headlines demonstrate, the teacher shortage is manifest most acutely at the district level, requiring local action (e.g. Rowell, 2018; Stephenson, 2018; Ward, 2018). School system leaders are tasked with determining how best to fill vacant positions given specific community and economic realities within macro-fiscal and regulatory contexts as well as dominant narratives about the teacher shortage (e.g., media, national research and policy). For example, schools serving low-income and predominately non-white student populations tend to have more pronounced recruitment and retention problems (Carver-Thomas & Darling-Hammond, 2017, 2019), making the success of one-size-fits-all statewide initiatives questionable. Further, diversity of micro-contexts suggests disparities in the ways in which local school systems are served by large-scale initiatives intended to address teacher supply inequities (Murphy, Armond & Guin, 2003).

There is a dearth of research that investigates uneven shortage distributions at the district level, and micro-level opportunities and challenges created by statewide policy responses. Acting at the nexus of micro-level leadership and macro-level policies and discourse, district leaders (i.e., superintendents) provide an important lens for understanding the localized manifestation of teacher shortages. This research contributes to the existing macro-level literature on teacher shortages through investigation of the ways in which district leaders make sense of the teacher shortage given local manifestations situated in broader state contexts. Specifically, this study responds to the following research questions, drawing on data from a larger study investigating the teacher shortage crisis in West Virginia: (1) How do district leaders make sense of the teacher shortage at the local district level?, and (2) How do district leaders respond to the teacher shortage given their sensemaking within specific micro- and macro-contexts?

This research highlights the localized nuances of the teacher shortage and the responses to that problem, with attention to how district leaders make meaning of the phenomenon. This work serves as a novel contribution to understanding the teacher shortage problem and the extent to

which statewide responses are perceived as available (or not) to district leaders in the face of local realities. Further, this research provides explanation for how the problem is ameliorated or exacerbated by existing policies, with implications for researchers and state policymakers.

Related Literature

Despite a wealth of scholarship focused on macro-level trends around teacher shortages, the issue is ultimately a local phenomenon. In this section, we build on subsets of the teacher supply and demand literature that concentrate on local contexts to illustrate the need for research attuned to local school leaders' sensemaking of the problem across diverse micro-contexts.

Localized Teacher Labor Markets

Recruitment and retention possibilities are influenced by place attributes as, more than other professions, the teacher labor market is highly localized (Boyd et al., 2006; Reiningger, 2012). The majority of teachers elect to stay close to home or choose schools in geographically and demographically similar locales to their home community (Engel & Cannata, 2015), even when they are graduates of high-poverty, high-minority school systems (Reiningger, 2012). This trend is particularly true for women, who make up approximately 77% of the teaching workforce nationwide (Taei, Goldring, & Spiegelman, 2018). Because districts show a propensity to hire local teachers (Engel & Cannata, 2015), those systems that tend to produce lower than average numbers of college graduates may find themselves trapped in a shortage cycle, limited to a small pool of local candidates and less able to recruit individuals who are unfamiliar with the geographic or cultural context (Bland, Church, & Luo, 2016; Reiningger, 2012).

Recruitment and Retention in “Hard-to-Staff” Schools

Indeed, the existing body of scholarship suggests the problem of teacher recruitment and retention is particularly pernicious in traditionally “hard-to-staff” schools—those under-resourced schools and school systems with relatively high levels of poverty and low percentages of White students, characterized by poor working conditions and disenfranchised student populations (Achinstein, Ogawa, Sexton, & Freitas, 2010; Carver-Thomas & Darling-Hammond, 2017; Haycock, Lankford, & Olson, 2004; Headden, 2014; Podolsky & Sutchter, 2016; Reiningger, 2012). For example, districts with higher percentages of low-income and non-White student populations have approximately double the number of teachers lacking proper certification and experience (Adamson & Darling-Hammond, 2012). Haycock (2000) argues these statistics fail to accurately capture the depth of the teacher shortage problem in hard-to-staff schools: “The fact that only 25% of the teachers in a school are uncertified doesn’t mean that the other 75% are fine. More often, they are either brand new, assigned to teach out of field, or low-performers on the licensure exam” (p. 4; as cited in Adamson & Darling-Hammond, 2012). While these data are important indicators of acuteness at the local level, they fail to capture differences across place, including rural and urban locales.

Rural and Urban Locales

The influence of locale type on teacher supply and demand is particularly striking in rural and urban districts, the latter receiving the greatest media attention. While scant research examines the current teacher shortage in rural locales, the problem of teacher staffing in rural places is not a new phenomenon (Cowen et al., 2011; Eppley, 2009; Miller, 2012). Previous research suggests while rural teachers are less likely to transfer across school types than urban teachers, they are also more

likely to leave the teaching profession entirely (Miller, 2012). Compared to schools in urban and suburban communities, rural schools more often rely on beginning teachers to fill vacancies, and these teachers are also less likely to have graduated from competitive colleges. Further, these schools are less able to retain early-career teachers early than suburban schools (Miller, 2012). However, some rural districts also serve smaller student populations and thus require fewer teachers. Identifying strategies to improve recruitment and retention could have an increased impact in these smaller districts.

A number of prescriptions for teacher shortage responses, particularly at the state-level, have emerged in recent scholarship (e.g., Espinoza et al., 2018; Podolsky et al., 2019; Reiningger, 2012). However, many of the examples of the implementation and effectiveness of these policies and initiatives are rooted in urban contexts. This points to both a lack of attention to rural contexts in the scholarship on teacher shortages and to potential issues with the applicability of such solutions across diverse micro-contexts. For instance, grow-your-own initiatives—career exploration opportunities for high school students and partnerships with institutions of higher education to train a local workforce—have been part of general recommendations to address teacher shortages (Carver-Thomas & Darling-Hammond, 2017; Kaka, Mitchell, & Clayton, 2016; Podolsky et al., 2019). However, broader issues of educational attainment for individuals from rural communities serve as barriers to developing that pipeline into the teaching profession.

Much of the literature on teacher residency programs is also focused in urban locales (e.g. Carver-Thomas & Darling-Hammond, 2017; Hammerness & Craig, 2016; Klein et al., 2013), as geographically-isolated districts likely have no natural higher education or non-profit partner in close proximity. Other efforts to recruit into the teaching profession, such as alternative certification pathways rely on recruiting college degree holders, which can prove difficult for rural contexts. Kaka and colleagues (2016) note, “very few communities outside of urban centers have individuals with degrees in specialized fields looking for a job” (p. 1). They continue, “the belief that several chemistry teachers will suddenly apply to fill a vacant position in a remote or hard-to-fill district is both antiquated and contrary to existing research that clearly illustrates the ongoing shortages in key academic disciplines” (p. 1).

In general, geographic placement can make it challenging or expensive for local districts to solve shortage problems through recruitment and retention initiatives (Bland et al., 2016). This leaves district leaders with the decision to employ myriad strategies to fill open classrooms, often through “less than ideal practices” (Podolsky & Sutchter, 2016, p. 3) including: the hiring of teachers with “substandard credentials,” the use of substitutes when available, emergency certification, placing teachers in subjects outside their certification areas, and leaving positions unfilled. These stop-gap strategies, when employed, can prove detrimental to student achievement, furthering inequitable educational opportunities for students (Haycock, Lankford, & Olson, 2004; Laczko-Kerr & Berliner, 2002).

District Leader Sensemaking

There is a dearth of scholarship exploring leaders’ sensemaking that shapes local-level responses. We contend such a perspective is needed, as the policy recommendations based on a set of exemplars (Darling-Hammond & Podolsky, 2019; Podolsky et al., 2019; Sutchter et al., 2019), though empirically grounded, do not capture the affordances and constraints of a range of local contexts nor the role of local leaders, as boundary spanners between micro- and macro-contexts, who make sense of the problem of teacher shortages and respond accordingly. We believe this

serves as a useful lens to contribute to an emerging understanding of how to address teacher shortages in a range of contexts through policy and practice.

Leaders engage in sensemaking “when the current state of the world is perceived to be different from the expected state of the world, or when there is no obvious way to engage the world” (Weick, Sutcliffe, & Obstfeld, 2005, p. 409). In short, sensemaking is the process by which organizational actors make sense, or meaning, of uncertainty and determine how best to respond given these attributed meanings (Maitlis & Christianson, 2014; Weick, 1995; Weick et al., 2005). Since Weick’s (1995) seminal text on sensemaking, the scholarship has taken two divergent forms: individual-level cognitive approaches to sensemaking (e.g. Spillane, Reiser, & Reimer, 2002; Spillane & Thompson, 1997) and social process approaches (e.g. Maitlis, 2005). Further, sensemaking has been utilized for understanding diverse organizational events, including but not limited to organizational crisis and change (e.g. Maitlis & Sonenshein, 2010) and local policy implementation (e.g. Spillane et al., 2002).

Because district leaders work at the nexus of micro- and macro-contexts, engaging with professional communities and district organizations, we frame our research using a conceptualization of sensemaking as a social process, marked by a reciprocal relationship between actors and the environment (Maitlis, 2005; Weick et al., 2005). This critical view of sensemaking highlights the ways in which the macro-level context “affects the cues [individuals] extract, the plausibility of various text and narratives, and the nature of enactment” (Helms Mills, Thurlow, & Mills, 2010, p. 189). The meaning ascribed to an event is further characterized by an emphasis on plausibility over accuracy; thus, different groups can make sense of and respond to the same problem in divergent ways, though they may frame the problem through common vocabulary and public discourse (Weick, 1995; Weick et al., 2005). This characteristic of sensemaking suggests leaders across districts might make sense of the teacher shortage in both convergent and divergent ways, resulting in both similar and diverse micro-level responses.

Through organizational actors’ participation in institutional logics that support certain norms while constraining other practices, sensemaking can actually create the conditions that precipitate and sustain organizational crisis (Maitlis & Sonenshein, 2010). Such norms are reinforced through public discourse and media coverage of crises, creating dominant narratives that further inhibit sensemaking and crisis response options. Because sensemaking is a social process influenced by both micro- and macro-relationships, whether it occurs in response to crisis or other change, sensemaking can be shaped and inhibited by hegemonic power structures (Helms Mills et al., 2010) that privilege some sensemaking, shaping contexts and related discourse, over others. While powerful actors at the organizational level can set the direction for organizational rules that shape sensemaking choices (Maitlis & Christianson, 2014), “they are themselves constrained by meta-rules and formative contexts” (p. 190).

In sum, district leaders’ sensemaking processes and responses are influenced by the local context (organization and community characteristics), by participation in professional communities (e.g. the statewide administrators’ association), and by dominant narratives (embodied in state policies and media discourse) that favor certain causes and solutions. Thus, we might expect district leaders to make sense of the teacher shortage, and consequently alter their practices, in both shared and unique ways. The use of sensemaking as a framework to guide district leaders’ understanding of and responses to a broad crisis experienced at the local level, can illuminate the ways in which they, as boundary spanners between micro- and macro-contexts, engage in responsive practice. This can, in turn, inform an emerging understanding of how state-level policy decisions designed to address teacher staffing issues differ in their ability to ameliorate shortages at the local level. Further, a focus

on sensemaking and consequent action approaches the problem from a resource perspective. In addition to recognizing particular micro-conditions that exacerbate staffing shortages, this research emphasizes the ongoing, active work of local leaders to confront the problem, given unique localized opportunities and challenges.

With a particular focus on the lack of scholarship focused on rural contexts, we focus our study on district leaders in the state of West Virginia. West Virginia provides an important case for studying the localized nature of the teacher shortage. West Virginia is a largely rural state, wholly situated in Appalachia, with some of the highest poverty rates in the U.S. (Center for American Progress, 2018; U.S. Census Bureau, 2018). While often viewed as a monolithic state by outsiders, West Virginia has growing, urban pockets in addition to its rural communities, and is home to diverse communities in terms of economic viability, demographic shifts, and geography, making a particularly informative case for investigation of localized teacher shortage sensemaking and responses. Since state-level policies and realities serve as part of the context of which district leaders construct meaning, we provide a rich description of the demographic and educational context in which West Virginia's teacher shortage is situated.

Research Context: West Virginia

West Virginia is comprised of 55 county school districts, which served a total of approximately 265,000 students during the 2018-2019 school year. This figure marks a decline in total enrollment for the sixth year in a row, with projected continual declines through 2026 (U.S. Department of Education, 2016). As a point of comparison, there are fewer students in all of West Virginia's K-12 schools than in each of the seven largest urban school systems in the country. This presents a situation for understanding causes and solutions to teacher shortages that is far different than those focused on large, urban contexts.

Even with a decrease in K-12 student enrollment, West Virginia has faced a growing teacher shortage, spurred by declining enrollment in teacher preparation programs (U.S. Department of Education, 2017) and issues of teacher turnover (Lochmiller, Adachi, Chesnut, & Johnson, 2016) consistent with broader trends across the county (Carver-Thomas & Darling-Hammond, 2019). In the 2017-2018 school year, there was a statewide shortage of over 700 teachers, or approximately 4% of the state's teaching profession, with the most acute shortages in math, special education, and elementary education (Kercheval, 2017). More recent data released by the West Virginia Department of Education (WVDE) has focused on classes taught by "non-fully endorsed teachers" instead of vacant positions, as a measure of the shortage. In areas such as math and science at the middle school and high school levels, nearly 20% of classes statewide are taught by individuals not fully endorsed either by content area or grade level.

Despite myriad reasons to explain the current teacher shortage, West Virginia serves as an example of some confounding facts. For instance, on average, West Virginia teachers score relatively high on large-scale measures of job satisfaction; and the cost of living is relatively low compared to other states (Learning Policy Institute, 2018; Missouri Economic Research and Information Center, 2018), defying typical factors attributed to teacher shortages. Another distinction is that, while there is extensive scholarship examining the disparities in teacher staffing in schools serving predominantly non-White student populations, West Virginia's White student population remains above 90%, with Black and Hispanic students (the next two largest racial groups) comprising about six percent of the student population (NCES, 2017).

Despite relative racial homogeneity, West Virginia is home to diverse types of school districts, ranging from metropolitan to remote rural, though approximately two-thirds of students attend schools in towns or rural areas (69% of schools) (U.S. Department of Education, 2016). Furthermore, over 50% of West Virginia schools are designated schoolwide Title I¹ (U.S. Department of Education, 2016), with schools in every district benefiting from Title I funds. High concentrations of poverty across all district locale types in a predominately White state serve as another way to position West Virginia as an interesting subject of study.

WVDE and the state's legislature have responded to the statewide teacher shortage through multiple policy mechanisms, including alternative certification pathways to fill chronically unfilled and high-needs positions (WVDE, 2018). These include options for practicing teachers to earn endorsements in additional content areas or grade levels through passing licensure exams, as well as options for individuals to enter the profession anew. As of the 2017-2018 school year, only 84 candidates were active in the latter pathway, with more than 70% filling special education positions and a quarter of the individuals hired in one county alone. The low number and limited reach potentially speak to the lack of eligible and interested candidates as individuals need to have at least a "relevant" bachelor's degree and pass the appropriate licensure exams to be eligible. This is likely connected to the educational attainment realities in West Virginia, which ranks 51st in the nation, behind all states and the District of Columbia, in the percentage of women with bachelor's degrees (Anderson & Clark, 2018)

At the same time the state has initiated policy reforms to reduce the teacher shortage, stakeholders point to several statewide reforms that have simultaneously made it more difficult to attract and retain teachers. These include a new WVDE policy that make it challenging for experienced educators to serve as new teacher mentors (WVDE, 2017), and hiring practices that inhibit districts from offering jobs onsite to candidates at career fairs. Beyond these WVDE policies, the school funding priorities of the state constitute possible contributors to the teacher shortage. The majority of school funding in West Virginia comes from the state, as opposed to local sources (U.S. Census Bureau, 2015). This system is problematic for the state's school districts because in fiscal year 2016, West Virginia's contribution of its state budget to public K-12 education ranked 43rd in the U.S. at 15.2%. (National Association of State Budget Officers, 2017). Between 2008 and 2018, West Virginia cut its state funding formula per student by over 11%, including an almost 3% cut in 2017-2018, the largest of any state in the nation for that academic year (Leachman, Masterson, & Figueroa, 2017).

Despite obtaining the bulk of its financial resources from the state, school districts experience variance in the salaries they can offer teachers based on their ability to raise local excess levies that go above the state's contribution. This system creates a structure in which wealthier districts are theoretically better able to recruit teachers than districts in economically distressed counties, exacerbating teacher shortages in high-needs geographic areas. As highlighted by the statewide teacher work stoppage in 2018, West Virginia's teachers have historically been deeply underpaid. Prior to the work stoppage, West Virginia teacher salaries ranked 48th in the nation (National Education Association, 2017), with salaries in counties on the state's borders starting at less than \$11,000 of some of their neighboring states (National Education Association, 2017). Even with the 5% raise won through the historic work stoppage, West Virginia teachers are still paid far less than their neighbors (Frohlich, 2018), and their health insurance—another key contributor to the work stoppage—remains unsettled territory.

¹ At least 40% of students must qualify for Title I in order for a school to be designated as schoolwide Title I.

Methods

The research we report on in this paper is part of a larger study into the antecedents and potential solutions for the teacher shortage crisis in West Virginia. In this section, we describe that broader work to provide state-level context around policy and discourse in which district leader sensemaking is situated. We then provide detail on the data and analyses drawn upon for our specific research focus reported in this article, with attention to district leaders' sensemaking.

Details on the Larger Study: Identifying Macro-Context Influences

The broader data set is comprised of interviews with a range of education stakeholders across West Virginia. Researchers interviewed state-, region-, and local-level stakeholders across West Virginia, including district leaders (which serve as the primary focus of this article), union leaders, WVDE officials, West Virginia Board of Education members, the state superintendent, and Regional Educational Service Agencies (RESA) personnel². Interviews were conducted from March 2017 to October 2018. Interviewees were asked about what they believed to be major causes of the teacher shortage, their ideas regarding possible solutions, and professional experiences regarding the shortage. District leaders responded to questions about how the teacher shortage manifests in their specific districts, perceptions of causes and possible solutions, if/how the shortage affects leadership practice, and the shortage's impact on students, as well as their localized responses to the shortage. As the sequence of interviews progressed, recurring problems and solutions were raised as specific examples in interview protocols. Participants were added as we continually assessed the representation of voices included in the full dataset, in part through recommendations from previous interviewees (Merriam & Tisdell, 2016).

In total, 12 interviews were conducted with 15 participants across the state, averaging approximately one hour in length.³ Following transcription of audio files, these interview data were coded in two cycles (Miles, Huberman, & Saldana, 2014). First, inductive coding provided a broad picture of participant-identified causes and solutions, as well as district or region-specific manifestations of the teacher shortage. This initial cycle of coding revealed 22 separate stated causes for the teacher shortage, three of which were specific to rural school districts, and 16 proffered solutions. Causes were collapsed into eight discrete categories; solutions were merged into seven discrete categories. In a second round of analysis, researchers employed cross-case analysis to understand nuances within and between stakeholder groups, (i.e. district leaders vs. state employees and within the district leader participant group). A summary of discrete categories and their prevalence across state/regional leader and district leader subgroups is provided in Tables 1 and 2. For the research we report on in this article, these broader analyses serve in establishing the state-level context around policy and discourse in which district leader sensemaking is situated.

² RESA positions were eliminated by the state shortly after data collection concluded.

³ While 15 respondents were included, two state leaders asked to be interviewed as a pair, and they had consensus answers across the coded categories. Thus, their responses are represented as a single response in the data tables. Two district interviews included the personnel director in addition to the district leader; their interview responses are coded as one interview in the data table, given the role of the personnel director in providing data as opposed to perceptions of causes and solutions.

Table 1
Overview of Discrete Categories: Causes

Teacher Shortage Causes	Total Number of Interview Sources	Number of state/regional leaders (7 total)	Number of district leaders (5 districts)
Unattractive profession	12	7	5
Teacher pay	11	7	4
State policy	10	5	5
Classroom conditions/students	8	6	2
Other professional opportunities	7	3	4
Geographic isolation	7	4	3
Lack of public support	4	3	1
Economically distressed communities	4	3	1

Table 2
Overview of Discrete Categories: Solutions

Teacher Shortage Solutions	Total Number of Interview Sources	Number of state/regional leaders (7 total)	Number of district leaders (5 districts)
Alternative/multiple certification pathways	8	3	5
Increase teacher pay	7	2	5
Teacher-in-residence program	5	1	4
Local initiatives	5	0	5
Higher Education partnerships/lobbying	3	1	2
Pay cost for teacher preparation/loan forgiveness	3	2	1
Changes to state hiring policy	3	1	2

Analysis of District Leader Sensemaking

Our focus in this article is on the set of five interviews with seven district leaders, representing five districts geographically dispersed across the state—referred to as North, South, East, West and Centre Counties⁴ (see Figure 1). These districts were purposefully selected based on geographic and demographic diversity, and divergent population shifts (Merriam & Tisdell, 2016) in order to build information-rich cases of teacher staffing across contexts (Patton, 2015). Table 3

⁴ All places and people have been assigned pseudonyms.

outlines some of the demographic and contextual data that illustrate the diversity among the five districts. Table 4 identifies the district leaders interviewed as part of the study.

Table 3
Overview of Local District Demographic and Contextual Data

District	West	South	Centre	North	East
Primary Industry	Natural gas	Coal mining	Diversified	University; hospital system	Washington, DC metro area
Population change since 2000	Decline (-6%)	Decline (-32%)	Decline (-8%)	Growth (+17%)	Growth (+37%)
Student Enrollment (approx.)	1000	2,500	20,000	12,000	19,000
Student racial demographics (>1%)	98% White	90% White; 9% Black	88% White; 5% Black	90% White; 4% Black; 2% Hispanic/ Latino; 3% Asian	85% White; 7% Black; 4% Hispanic/ Latino
% Free/ Reduced Lunch	50%	59%	42%	36%	50%
Median household income	\$39,000	\$25,000	\$47,000	\$47,000	\$57,000
District size (approx. sq. miles)	250	500+	900	350	300
Number of schools	4	10	70	20	30
% of District parents with BA or higher	14	6	24	44	20
Proximity to IHE	1+ hour	1+ hour	<30 min.	<30 min.	<30 min.

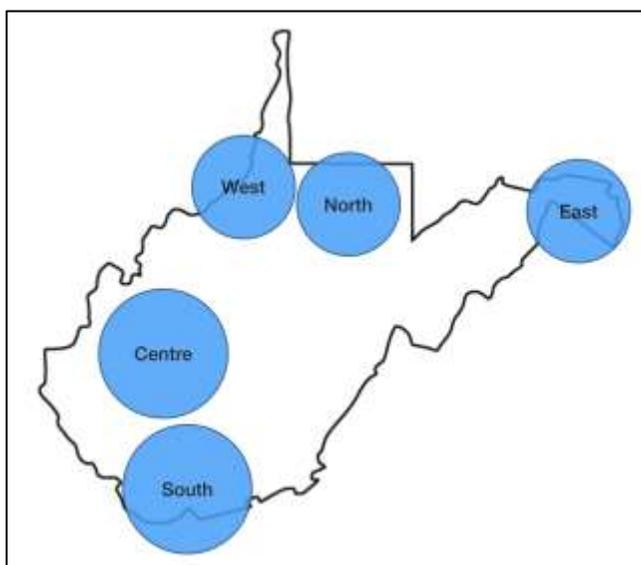


Figure 1. Map of West Virginia with Approximate Geographic Locations of Focal Districts

Table 4
Summary of District Leader Interviewees

District	Interviewee Name(s)	Position in District	Years in Position
West	Kate Beckworth	Superintendent	9
South	Sam Hoyle	Superintendent	7
Centre	John Masten	Superintendent	20
	Martha Link	Director of Human Resources	14
North	Tom Gaine	Superintendent	10
East	Chad Rhodes	Assistant Superintendent	6
	Julie Maxwell	Personnel Director	7

These five district cases were the subject of an additional round of analysis, informed by our pair of research questions related to: (1) district leaders’ sensemaking of the teacher shortage at the local district level, and (2) their responses to that problem within their specific micro-context as situated among macro-level discourses and policies. The interviews were analyzed to identify district leaders’ sensemaking of the teacher shortage in their local context (Research Question 1). This entailed a new round of inductive coding, with a focus on district leaders’ perspectives and affective reactions to the problem as it pertains to their local context. Coding was also conducted to capture district leaders’ responses to the teacher shortage in their local context (Research Question 2)—with a particular focus on concrete enacted responses or perceptions of possible responses communicated in the broader narratives about the problem. Member checks were conducted with three district leaders to discuss and refine our analyses.

Findings: Making Sense of the Teacher Shortage

Across the five districts in this study, district leaders identified causes of the teacher shortage that were consistent with many of those identified by other stakeholders that were interviewed in the broader study and what has been identified in the broader scholarly literature. Understanding their interviews through the lens of sensemaking provided a novel interpretation of their perspective, beyond an accounting of causes and solutions. In this section, we provide more detail on main themes that emerged from our analyses around each of the two research questions, related to district leader sensemaking of the teacher shortage and to their responses to the teacher shortage given their sensemaking.

Localized District Leader Sensemaking

Leaders made sense of the phenomenon in paradoxical ways—as a commonality across districts and, simultaneously, as a localized issue with particular manifestations dependent on specific aspects of the local context. This complex meaning making allowed leaders to consider their power—or lack thereof—to control local teacher recruitment and retention. We highlight these two main themes below—(1) teacher shortage as a local phenomenon, and (2) district leaders’ perceived locus of control in addressing the teacher shortage.

Making sense of the shortage in relatively metropolitan districts. Given relative similarities in local district characteristics, we expected district leaders in North, Centre, and East County Districts to make sense of the teacher shortage in like ways. However, each leader presented unique understandings of the ways in which the shortage was defined and manifested in his specific district environment. As North Superintendent Gaine explained,

I may report to [WVDE] that I’m short 10 teachers. It doesn’t mean that I have 10 classrooms that are vacant. It means that I didn’t have enough time to post and fill those positions and put a full-time person in there, that I’ve had to put a sub in there. Then it becomes an issue whether or not that sub is certified.

He continued,

If it’s special ed[ucation], do I have a sub that’s special ed certified? If I do, it’s still considered a vacant position, but at least I’ve got somebody certified in that area. It may mean I’ve got an elementary teacher [vacancy], but I’ve got a middle school person trained that can work in that elementary sphere, so to speak, that’s not certified, but it’s not a vacant classroom.

Superintendent Gaine largely makes sense of the shortage in North in terms of his central office’s need to engage in last minute hiring practices to fill vacancies, leaving the district with a shallow pool of short-term substitutes. In general, North fares better than some of the more remote districts in its ability to fill positions through the early summer months. However, by July, Superintendent Gaine says he is “scrambling” like the rest of the state, though he recognizes his district’s relative attractiveness to recruit last-minute placements and capitalizes on this unique geographic and financial advantage. In Gaine’s words, “I’ve got that little more recruiting than maybe somebody does in [South County].”

Superintendent Gaine’s confidence in navigating the shortage is contrasted with the unease experienced by East County leaders, despite some of the apparent similarities in the two counties. East County has experienced continuous explosive population growth for over a decade, leaving

Assistant Superintendent Rhodes to remark, “every year we do not have enough teachers.” The district finds itself in a position of “adding new classrooms at the same time we’re losing teachers.” Given this specific student enrollment issue, East County provides a context similar to much of that reported on teacher staffing issues nationwide—an increased demand for teachers in the face of decreasing supply (Sutcher et al., 2019).

While district leaders in East County recognize a decreased recruitment pool, they make sense of the shortage largely as a retention problem, created by the district’s geographic positioning next to Virginia and Washington, DC, which offer much higher salaries. This region also offers higher-paying job opportunities outside the teaching profession. Unlike North County, East County, according to Personnel Director Maxwell, is unable to offer a competitive salary for its region, even though the salaries for teachers in East County are the highest in the state. This presents a novel dilemma, as comparing teacher salaries within the state does not provide an accurate picture of the recruitment and retention strengths of particular counties.

East County’s attrition woes were further compounded by the 2018 statewide teachers’ strike, as representatives from out-of-state districts “were coming on the picket lines and handing out [recruitment] flyers to teachers on strike,” according to Rhodes. “They encourage teachers to break their contract and come to the other state. There’s no recognition that there’s an acceptable notice of resignation.” In fact, there is no recourse for breaking an existing contract with East County Schools to transfer across state lines, according to Rhodes. These districts successfully “poached” 40 teachers from East County during the work stoppage, according to Maxwell.

Though shrinking in population—unlike North and East Counties—Centre County is still by far the largest district in the state. As a result, Centre County “stand[s] a large chance of having a lot of classrooms empty,” according to Superintendent Masten. Masten largely constructs teacher staffing issues in Centre County as a product of harmful state policies, specifically state regulations on teacher transfers. West Virginia places regulations on within-district teacher transfers, with teachers not allowed to transfer between schools beginning 20 days before the start of the school year. Centre County, according to Masten, has teachers who could be placed in vacant positions as they arise, but state policy prohibits late transfers. This shortage points to a pipeline problem for Centre County, and Masten largely makes sense of staffing issues as a recruiting problem, with vacancies exacerbated by the state.

These findings suggest that district leaders, even in relatively similar contexts, can make sense of the teacher shortage problem in front of them in notably different ways. For instance, leaders could see the problem as primarily one of recruitment, of retention, or of state policies that impact hiring and teacher transfers. This sensemaking of the problem by district leaders serves as an important illustration of difference across micro-contexts within the same state and across similar locales. Despite their differences, district leaders across the metropolitan contexts in our study seemed to agree on one thing—as Centre County Superintendent Masten shared, they are in a better relative staffing position than the “smaller, rural districts.”

Making sense of the shortage in smaller, rural districts. West and South Counties are substantially smaller than North, Centre, and East districts—each with declining student enrollment—and situated in rural contexts. While South and West leaders shared some common areas of sensemaking about the shortage, their constructions diverged in important ways, at times converging with those of the metropolitan districts. South and West County’s positioning as border counties provides one example of this. West County Superintendent Beckworth’s sensemaking about the acuteness of the shortage in her district is related to other, more lucrative career opportunities in her area and her geographic positioning at a border, similar to the

situation in East County. According to Beckworth, “It’s very easy for people that live around this area to go across the river and get a teaching job in Ohio,” where they enjoy higher pay and better benefits. This issue is not as prevalent in South County, as it borders areas that are equally rural and isolated, thus presenting less of a disparity for career opportunities. As a result, South County Superintendent Hoyle’s sensemaking of the teacher shortage was unrelated to its border positioning. The idea of the problem of border counties thus appears relative based on the specifics of the border, adding further nuance to localized meaning making of the shortage.

Instead, Hoyle understands the shortage as an issue of the relative geographic isolation of districts such as West and South Counties, which results in sensemaking divergent from leaders in the more metropolitan counties. West Superintendent Beckworth describes her district as “a very rural county, so it’s gonna be less attractive for us to get people to come here anyway.” She believes the shortage is a “bigger problem rurally.” Because of its geographic isolation, Beckworth noted West County was unable to benefit from partnerships with universities to fill some of these vacant classrooms like some other districts. Consequently, the district has “always counted on our own—if you’ll describe it in that way—our own graduates that wanna come back and settle here” to fill classroom vacancies. While Beckworth’s constructed meaning of the shortage relates in some ways to that of East County leadership, her sensemaking diverges around the issue of locale type.

Beyond the problem of classroom vacancies, both West and South districts have a shortage of short-term substitutes and cannot fill classrooms on a daily basis. “I can’t lie to you. I have days we do not have bodies in all our classrooms,” West Superintendent Beckworth explained. South Superintendent Hoyle reported that, after filling the vacancies they can, they manage about “15 vacancies all year long,” which is striking given the district’s smaller student population relative to the other counties. These issues have some similarities to the shortages of substitute teachers discussed by North County Superintendent Gaine, though the reasons for the shortage are different as are the stakes—for West and South Counties, the concern is that a classroom will not have an adult on a given day. As Superintendent Hoyle notes, “I don’t feel like that’s quite fair to the students in South County.” In capturing the breadth of the problem, Hoyle explained, “You’re talkin’ about things that are outside the school system, that I really have no control whatsoever over, are affecting reasons that’s difficult for us to retain.”

Making sense of the shortage: Locus of control. A theme that emerged in our analysis of the district leader interviews is reflective of the quote from Superintendent Hoyle above—that the problem of the teacher shortage and its causes were positioned as either within or outside of local control (or, in particular, the control of the district leaders, themselves). This serves as an important revelation, as one of the proposed takeaways of the body of existing scholarship on teacher shortages is that the identification of causes and possible solutions can inform local action (Darling-Hammond & Podolsky, 2019). However, that implication assumes local leaders have a sense of agency to address the problem. In contrast, we found district leaders primarily make sense of the teacher shortage problem as something out of their control—something that is being done to them. Furthermore, district leaders who exhibited more agency to address the problem represented districts with relative affordances (primarily financial), thus creating a system of winners and losers that presents problems for efforts to address the issue statewide.

Perceptions of external locus of control. There was broad agreement across district leaders about teacher shortage causes such as low pay, inadequate benefits, the difficulty of the work, created in part by high poverty rates and the state’s opioid epidemic, and lack of respect for the teaching profession. The problems of pay and respect (the latter construct reflected by our “unattractive profession” data code) were noted by almost all state- and local-level

participants as well. Superintendent Gaine explained since he first entered the state's educational system, benefits packages for teachers have declined, and pay has not kept pace with other professions. Superintendent Hoyle echoed these sentiments, "I think it comes back to . . . pay and respect." East County Personnel Director Maxwell explained, "The feeling of locals is the state needs to help out; [teachers are] state employees. The state needs to be taking care of state employees." These perceptions suggest a belief among local leaders that causes of the shortage are largely out of their control and influenced by cultural and state-level contributors to the low teacher supply.

Simplistic supply and demand arguments fail to adequately explain the situation confronted by local leaders across West Virginia. District leaders, particularly in metropolitan locales, made sense of their local shortage in part due to state policies around hiring and transfers—issues deemed outside local control. Further compounding these roots, rural district leaders (South and West) made sense of the problem with respect to their rurality, geographic isolation, and poor community infrastructure, which make it difficult to attract outsiders to teach.

For example, South Superintendent Hoyle attributed the shortage to causes beyond inadequate pay and lack of respect to a lack of "social activities for [teachers] to do in [South County], as well as being so rural isolated" at the local level. These issues, along with "road systems and housing" are local problems cited by exiting teachers in surveys administered by the district "that need to be better to entice them to stay." He added that it is difficult to attract even those people committed to the school system to become part of the local social fabric.

Many of our employees, and I'm one of 'em. I'm as guilty as anyone. I'm an employee of South County Schools that lives in another county. Here in the central office, it's 30 or 40 percent of the central office staff lives in another county.

Hoyle's perspective highlights a tension between the decisions he and others need to make personally (such as where to live) and the realities he confronts as a district leader.

Thus, we find district leaders across all district types attributing the shortage to causes outside their control. While all district leaders made sense of the shortage as a problem, at least in part, created or exacerbated by state policies, rural leaders also attributed the shortage at the local level to rural-specific issues, compounding externally-located shortage roots. For district leaders, this external locus of control left little room to control teacher staffing issues, at least around these problem areas.

Opportunities for local power to affect teacher staffing. Despite these collective areas of sensemaking that placed the teacher shortage problem outside the control of local leaders, there were areas of divergence, largely related to geographic placement and community economics, or local-level financial resources, that led some superintendents to understand at least facets of the shortage as something within their power to correct. The perception of the ability to control one's fate was largely experienced by district leaders in the metropolitan counties (North, East, and Centre Counties)—relatively wealthy districts with favorable geographic placement and an ability to be competitive in recruitment, despite possible continued issues in retaining teachers.

North Superintendent Gaine made sense of the shortage as a zero-sum recruitment game, in which his district was a relative winner through its geographic and financial positions. This position was buoyed by the district's ability to offer higher compensation, through local taxes, than other districts situated in communities that are unwilling or unable to pass comparable levies to pay more

than the state-set teacher salaries, and his district's placement near a major university. Gaine also touted his ability to recruit teachers from other districts in the state, extending the problem of teacher movement to more than just individuals crossing state lines: "I'm able to steal from some counties because we offer a little more pay. They like the connection with the university." While these efforts can be successful, Superintendent Gaine notes, this leaves the other districts with a shortage in that area. He argues he can recruit teachers from neighboring counties or states as an attractive temporary landing pad until they find a job in their home areas. Overall, Superintendent Gaine's proactive stance is suggestive of a strong onus of control over his ability as North's leader to affect teacher staffing issues in his district.

Similarly, while Centre County Superintendent Masten places much of the blame for his district's staffing issues on state policy, and district leaders from East County expressed concerns about the lack of control they have over retention issues, leaders in both counties invest a substantial amount of district funds in recruitment efforts, capitalizing on each district's relative attractiveness to new teachers to decrease vacancies. These actions imply a sense of control over at least a partial solution to local staffing problems. In general, the ownership asserted by leaders in the more metropolitan counties seems enabled by available resources—geographic and/or financial—that are not available to more rural counties, which also appears to impact the available and resulting responses to address teacher shortages.

Moving from Sensemaking to Action: District Leader Responses

The ways in which district leaders made sense of the shortage, particularly with respect to their ability to correct staffing issues, led to different localized leader responses. Those leaders who felt little power to fix shortage problems relied heavily on existing solutions offered by the state, though they experienced incongruities, drawbacks, and challenges in enacting those possibilities. District leaders who felt greater agency drew on, though also acted beyond, state levers to implement unique localized solutions. This again highlights the affordances granted to some districts, causing striking disparities in a statewide effort to address the problem.

Responding to teacher shortages in their local contexts also creates new demands for district leader practice. For some district leaders, particularly those with large central office staffs, leadership responses required little deviation from previous practice. District leaders in rural districts with smaller central office staff, however, felt a disproportionately large strain on their practice as they responded to the shortage crisis, thus changing the nature of the role. In the section below, we highlight three main themes related to how district leaders respond to the teacher shortage as shaped by their sensemaking and local context: (1) the leveraging of prevalent solutions and the resulting challenges and opportunities, (2) the implementation of unique strategies and solutions, and (3) the impact on leadership practices.

Reliance on existing solutions: Challenges and opportunities. East County Assistant Superintendent Rhodes said his district "tr[ies] to do everything we can to manage our little world." This was a common response across leaders, with variation in what is perceived to be "everything" that can be done. For some districts, the focus is on available policies and other opportunities. This includes grow-your-own initiatives, teacher-in-residence partnerships, and alternative or emergency certification pathways. From our interviews, it is clear leaders engage in these initiatives with hope that they might provide long-term solutions, though this hope is problematized by local realities as understood by district leaders. These responses and

reflections prove valuable for understanding the role of statewide efforts to address the teacher shortage and the pitfalls as it relates to impact at the local level.

“Grow your own” initiatives. District leaders, primarily in the more rural counties (South and West), referred to the role of recruiting teachers with ties to the local community. Attention to “grow your own” initiatives have been part of general recommendation to address teacher shortages (Carver-Thomas & Darling-Hammond, 2017; Kaka et al., 2016; Podolsky et al., 2019). District leaders from South, West, and East Counties shared their efforts at grow-your-own initiatives. While leaders engaged in this work believe it is worth the resource investment, and possibly their best option, they note the minimal success of these programs in attracting teachers.

As noted by South County Superintendent Hoyle, the local pipeline of prospective teachers, ideally a rich source of teacher supply, does little to ease the more pernicious shortage areas, such as math and science. Most of the upcoming teachers, according to Hoyle, are young women interested in early childhood education, as opposed to STEM or special education. “We don’t have many of those that have an interest [in our critical shortage areas].” That has led to severe and longstanding shortages, with clear implications on students’ educational experiences.

Last year, we had one person in both the middle school and the high school, one individual that was certified in math. Everyone else that was a math instructor, was not totally certified in mathematics. You could imagine what that has done to the instruction at the higher-level mathematics, for our students.

South County works with its local career and technical center to provide childcare fundamentals courses to spark interest in the teaching profession. It also encourages local students to become teachers through a teaching career-focused student organization. Though these efforts have “not had great success,” Superintendent Hoyle is hopeful they will eventually work to create a local pool of teacher candidates. Overcoming the local teacher shortage, he believes, is

gonna’ have to happen that way ... I truly believe to have a good educator and a good teacher, you have to have relationships with the families and the communities and the kids. You have to live in that community.

East County administrators work with the local community college and Jump Start programs to encourage local students to stay in the area and become teachers. These grow-your-own efforts are also extended to “capture young moms whose youngest child has entered kindergarten.” The district markets its grow-your-own campaign as a career choice that allows people to give back to their communities. But, Assistant Superintendent Rhodes admits, this is a “hard sell” because students are left to consider whether a local career in education will “help them pay their tuition bill.” The district lacks the capability, as suggested in the literature (see Sutcher et al., 2016), to couple its efforts with loan forgiveness programs and can offer no financial incentive for participation. The district efforts recruit a “very small percentage” of teachers to the school system, but the superintendent argues that every approach helps somewhat. “Even if our approach only brings in one person, it’s worth it, because otherwise it’s nobody.”

“Teacher-in-residence” policies. Teacher residency models highlighted in scholarship (e.g., Carver-Thomas & Darling-Hammond, 2017; Guha, Hyler, & Darling-Hammond, 2016)—partnerships between districts and institutions of higher education to offer intensive, school-embedded preparation at the post-baccalaureate level—are not available in West Virginia (the reasons for which are beyond the scope of this article). Instead, districts across the state have engaged in different ways with the similarly named (though not-so-similar in practice) “teacher-in-

residence” option afforded by state policy. South County was the first to pilot the state’s teacher-in-residence program, where candidates in their last semester of a teacher preparation program are placed in a vacant classroom, as opposed to a mentored student teaching placement. They receive a small salary and can be hired into that position the following school year.

However, Superintendent Hoyle feels conflicted about participating in the initiative, though his desperation to fill vacant positions translates to initiative adoption, even as it places a resource strain on the district and, he fears, negatively affects student and early-career teacher experiences.

I’d love for those kids to come because at least it gives me someone that’s interested in that field, and actually wants to become a teacher. When you look at the big picture, we are the highest rate of poverty, the lowest test scores in the state, typically every year. We’re gonna’ take the least experienced individual that we can find and plug ‘em into those classrooms. What does that do, not only for my students, but for that student that is on the block, that’s a tough row to hoe, when they have never been in a classroom before.

Furthermore, with so few fully-certified educators in certain fields, the district is unable to provide the needed supports for new teachers—further highlighting the issues Hoyle mentioned.

Hoyle expressed concern that this model actually exacerbates the teacher shortage because he believes it undermines the teaching profession and increases attrition out of the profession given the difficulties of the position in his district.

I don’t know where else you would see that model in a business model, or the medical profession, or anywhere else in the world. Where else would you do that? It actually weakens the system more than strengthens the system.

Regardless of his concerns, Hoyle says he will “beg” for teacher-in-residence students because they fill a need, even if only as a short-term solution, and the hiring of these students is “better than the alternative” of empty classroom positions.

East County also has a history with teacher-in-residence candidates, with mixed results. Because of the district’s concerns about teacher quality for its teacher-in-residence and permanent substitute teachers, it has been forced to funnel its federal dollars aimed at math improvement into support for these uncertified positions “just to get them to basic math instruction.” Assistant Superintendent Rhodes laments, “we’re creating math teachers instead of improving them.” Like its grow-your-own initiative, the teacher-in-residence program has had a minimal impact on filling vacant positions in high-need areas in East County.

Even when primarily relying on available state policies and solutions, districts’ ability to participate in teacher-in-residence programs varies by geographic placement due to the established policy restricting such pathways to individuals near the end of their traditional, university-based teacher education program. Given its remote locale, this option is limited for West County Schools, where Superintendent Beckworth says the district’s distance from “any college” makes teacher-in-residence programs impossible. She relies on personal relationships in the community to fill vacant positions. For example, she knew a retired teacher from a neighboring district who lived in West County. She convinced him to come out of retirement to take a full-time position, where he had been working as a day-to-day substitute. “We were very fortunate that he’s that committed to our school system.”

Alternative and emergency certification. All districts in the study participate in and rely on teachers entering classrooms through alternative and emergency certification pathways, but no

superintendent expressed enthusiasm about these pathways or the teachers they have hired from them. Several district leaders expressed wariness about hiring such individuals, for reasons similar to that of the teacher-in-residence options, though others continued to note the critical need for these individuals to address growing teacher shortages.

East County Personnel Director Maxwell said she feels wary when the district gets “cold calls” from people with alternative certification. “I don’t know them. I want them to be a permanent sub[stitute] first, so principals can see them [in the classroom environment].” Districts like East County are hesitant to invest in these candidates until administrators feel confident these applicants are quality teachers. West County Superintendent Beckworth takes a similar perspective regarding alternative certification pathways:

We want the most qualified person in the position. There’s still something to be said for someone in a program for four years centered around ... how you handle, teach students. Does a six-week course [part of the state’s alternative certification pathways requirements] really measure up to that degree? For the most part, no.

But, districts often find themselves dependent on these alternatively certified teachers as one way to fill an otherwise vacant classroom, particularly in their hardest-to-staff positions. North County Superintendent Gaine described the nature of that situation and decision:

I had four math positions open, four or five this summer. Obviously, what I want is I want that person who’s been trained. You know, the pedagogy, the whole bit, so that that person coming out of college is able to give me exactly what I need without having to go back and do some retraining or the things that would be if you had to go an alternate way. That’s our first choice. I’ll go that way every time. What backs me into a corner is when I don’t have that choice available. I have to look at something else.

Gaine sees alternative certification as a necessity, hiring individuals with the understanding that they will work towards the required certification while on the job. He feels immense pressure to fill positions like math from parents who want “a qualified person in that teacher’s classroom.” This became another space in which he exhibited a level of agency not seen in every district, as he asserted, “I can’t wait around ... for [institutions of higher education] to give me what I need. I have to be able to go out there and service my own needs.”

South County Superintendent Hoyle is unhappy with his district’s reliance on adults certified through alternative or emergency means. Further, as with the teacher-in-residence option, he believes these policies exacerbate the profession’s unattractiveness.

I mean that’s sad when you think about it. . . . Where else do you see that? I’ve got a four-year degree, or probably now about an eight-year degree. Can I go be a podiatrist, or a surgeon? It’s offending in a lot of ways.

Alternatively, Centre County Superintendent Masten expressed the least hesitation regarding hiring individuals with alternative or emergency certification, motivated by the pressing needs of the teacher shortage. At the time of this study, Centre County was short eight math teachers. “If we hadn’t had alt cert,” Masten argued, “we’d have more than eight.” Perhaps consistent with this viewpoint, the county employs by far the most educators in the state who are in the formal alternative certification pathway made available through WVDE policy.

While all participants in this study shared their preferences for teachers from traditional teacher preparation programs over alternatively certified teachers, the persistent shortage compelled leaders to turn to alternative options to fill otherwise vacant positions. As with other available solutions, the possibilities varied by location, and district leaders' perspectives on the solutions also shaped their use.

Implementation of unique localized solutions. In addition to solutions and policies that were available, though not equally effective or well-received, statewide, some districts drew on solutions that were more novel. In general, these solutions emerged from North, Centre, and East Counties—districts with geographic and financial affordances and, relatedly, with district leaders possessing a greater sense of agency in addressing the teacher shortage problem.

This was particularly striking in Centre County, where Superintendent Masten utilizes district resources to recruit heavily from outside of the county, a benefit of its relatively metropolitan locale. This presents a different situation from districts that are reliant on homegrown populations of teachers. Centre County Director of Human Resources Link collaborates with local universities to “bring people around to show them the valley, free hotel rooms to visit, pays \$1,000 for new recruits, and [newly committed teachers] get first and last month’s rent free.” This considerable investment is deemed necessary by Masten who is willing to explore “any avenue we can take” to increase teacher supply. He credits this “strategic recruiting plan” with decreasing the number of vacancies in the district from 150 in 2004 to 75 in 2018, during a time when vacancies were otherwise increasing statewide. Centre County has also been at the forefront of the use of other strategies, including a virtual program, in which middle and high school students are managed by a paraprofessional in the classroom, while being taught by a certified teacher online. While the use of this approach is in its infant stages, district leaders are hopeful they can expand this practice, for hard-to-staff positions like foreign language.

Changing leadership practices. A final theme that emerged in our analyses was the way in which district leaders' roles were shaped, and in some cases transformed, by the needed attention to the persistent teacher shortage. Ultimately, it comes down to district leaders' feeling of responsibility to address the issue. How that responsibility manifests itself, though, seems dependent on each district's administrative structure, the available resources, and the particulars of the causes and possible solutions of the teacher shortage in each context.

In East County, the bulk of stress related to the shortage falls on Personnel Director Maxwell, who says the shortage has “increased my stress load incredibly.” She describes her work as being “in a tunnel” in the spring and summer months as she tries to fill vacant positions. “Every day, every second, my vacation time, is spent on the phone with principals, emailing... just trying everything in my power to put quality bodies in classrooms.” That tunneled work, she explained, included finding “bodies” to fill 400 openings. “I know how to make a good hiring decision, and I feel responsible at the end of the day for who goes in front of those kids.”

This feeling of responsibility extends across district leaders. West County Superintendent Beckworth, who, unlike East County, does not have a dedicated Personnel Director, says the shortage has “caused me more stress.” She shared that she wants her district to be “quality,” and it is “frustrating” when she is unable to fill vacant positions. She obsesses about particular classroom cases. “I find myself dropping in those classrooms [with non-certified teachers] more often. . . . It's not my workload, but I make it my work.” East County Assistant Superintendent Rhodes echoes her concerns. “Research shows how much instruction a child loses just because of teacher attendance. Take those 10 days [that a teacher might be absent] and not make it a whole year. . . . Just look at

our test scores.” Though population trends and geographic positionality are divergent across county school systems, in all districts leaders are concerned about the quality of instruction their students receive because of the teacher shortage. As South County Superintendent Hoyle said of his students, “They understand that they had six different teachers in third grade, or they never had a certified math teacher. They understand at the high school level, what that does to them as far as giving them a disadvantage.”

Centre County Superintendent Masten, who arguably has the largest administrative staff, offered a point of contrast related to his role. In this large district, each school has a curriculum vice principal. This person “follows those [non-certified] people closely,” thus serving as a specialized asset for addressing this situation not afforded to all districts across the state. While one might imagine the productive ways such a role could be used if schools were fully and adequately staffed, Superintendent Masten does not feel the prominence of non-certified teachers alters or strains the role of the curriculum vice principal. This is even in the face of situations where the same math course may have up to four different substitutes over the course of a year. It is the task of the school-based curriculum vice principal to ensure standards are being taught despite this discontinuity in instruction. Meeting these standards is important to Superintendent Masten. “My son went through the system, and I want all kids to get that same experience.”

The impacts of the shortage on district leaders’ roles and resources are important considerations for the ways in which the shortage alters traditionally conceived roles and responsibilities of district leaders and forces a redistribution of scarce district resources. These leadership and financial factors at the local level further compound statewide one-size-fits-all approaches to solving the teacher shortage.

Discussion

This research offers a new lens to understand teacher shortages. A focus on district leader sensemaking problematizes research that offers solutions—whether national, state, or even local—as an effective way to combat teacher shortages by recognizing the role of how district leaders make meaning of the problem and evaluate possible solutions within their specific micro-contexts. The findings of this study suggest two important considerations regarding teacher shortages: (1) Leaders make sense of the shortage in convergent and divergent ways, with areas of convergence tending to be around shortage causes outside local control related largely to state contexts, including teacher pay and policy, and areas of divergence related to micro-conditions, including locale type and local economic health; (2) Dependent on local leaders’ perceptions of control to mitigate the teacher shortage, they engage in responsive practice reliant exclusively on state-provided solutions or in combination with unique local actions with widening disparities between metropolitan and rural districts.

Convergence and Divergence: Complexifying the Local Nature of Teacher Shortages

It has been well-documented that schools serving low-income and predominately non-white student populations tend to have more pronounced recruitment and retention problems (Carver-Thomas & Darling-Hammond, 2017, 2019). While these persistent findings point to the need for focused attention on such contexts, a dearth of scholarship has investigated local-level manifestations of teacher staffing issues, including across locale types. Our review of literature on teacher shortages—including the recent special issue in this journal (Darling-Hammond & Podolsky, 2019)—finds the attention rural contexts receive is typically limited to the phrase “rural and urban”

used as a catch-all for contexts most disproportionately affected by teacher shortages. As our research illustrates, leaders across metropolitan and rural locale types make sense of the teacher shortage in important divergent ways, with rural leaders making sense of the problem largely as something outside their control.

While locale type matters to district leader sensemaking of a teacher shortage, this contributing factor is further compounded by other micro-conditions, including geographic placement (i.e. border status, proximity to a university, the presence of other industries). For example, East and West Counties—different in their size and population trends—shared similar struggles in terms of recruitment and retention as border counties, leading to losses of current or potential personnel because of higher-paying opportunities in other states. Geographic positioning as border counties was salient to leaders in West and East Counties and was felt directly as they worked to address the issue in their local context. However, the plausibility of this sensemaking had its limits, as South County’s leader—also positioned at the state’s border—recognized economic distress and geographic isolation as more powerful explanations. These complex layers comprising micro-contexts create conditions for sensemaking unique to the individual district. Overall, this research has shown the way in which the issue of teacher shortages must be understood more specifically than in just general demographic and socioeconomic terms, to include, for example, locale type, geographic situation, and local revenue base within a given state context. Attention to district leader sensemaking provides novel insight into the nature of the problem as it is experienced across diverse local contexts.

Mounting Disparities across Locale Type and Responsive Practice Shaped by Sensemaking

While we found areas of convergence and divergence across all district leaders, an important trend that emerged in our analyses was the growing staffing disparity between rural and metropolitan districts. In addition to the external factors impacting all district leaders—low teacher pay, inadequate benefits, high poverty rates, the state’s opioid epidemic, and the lack of respect for the teaching profession—leaders in West and South Counties are faced with additional factors related to geographic isolation and financial distress that make it difficult to recruit and retain teachers.

This varying sense of control held by the district leaders in our study—divided by the rural and metropolitan contexts—related to perceptions on the available solutions, either offered by the state (through policy) and broader narratives or as a novel, self-initiated solution. All district leaders engaged in responsive leadership practice to either ameliorate the shortage in the local district or mitigate the effects of unfilled positions on student learning. However, leaders in East, North, and Centre Counties, who were supported by relatively ample personnel resources, a healthy economic base, and geographic attractiveness were able to be more selective with their use of available initiatives and mechanisms to address the teacher shortage in their context. These leaders also engaged in strategic recruitment plans, poaching from other less attractive districts, and virtual learning opportunities. In contrast, South and West Counties, with smaller central office staffs, diminished local tax bases, and geographic isolation, relied almost exclusively on state-provided solutions, even though these provided little relief. Further, West County’s superintendent found even these solutions impossible at times, given its distance from universities, and South County’s superintendent, despite mounting needs, was skeptical of the available solutions and saw them as potentially contributing to the problem.

These divergent feelings of agency translated to different alterations of leadership practice in response to the teacher shortage, with all district leaders, but those of Centre County, the largest

district in the sample, describing changed administrative roles. South and West's district leaders described their practice in terms of mitigating the negative effects of vacant and merged classrooms and uncertified teachers on student experiences. In contrast, East and North's leaders described altered practice with respect to a newly required heavy emphasis on recruitment of new teachers and professional development for uncertified teachers.

Implications for Research and Policy

We see this disparity as highlighting needed improvements in terms of policy and investment efforts around teacher shortages that consider the local nature of the problem and the particularly dire challenges faced by rural contexts. For example, the more metropolitan districts were able to implement targeted recruitment initiatives and offer increased pay through a reliance on a healthy local tax base. Without those funds, South and West districts were unable to recruit and retain teaching personnel nor add needed administrative positions on par with those of other districts. A state funding system that takes into account local disparities could effectively level the playing field, at least in terms of teacher pay or recruitment and professional development opportunities.

State policymakers also need to recognize the way in which policies intended to curb the state's teacher shortage, such as alternative and emergency certification pathways, seem ineffective for the neediest districts because of their distance from higher education partners and the barriers related to their geographic isolation. Policy efforts to mitigate these geographic disadvantages, including the use of virtual higher education partners might increase the ability of geographically isolated districts to benefit from the state's initiatives. Further, targeted efforts aimed at increasing college access and completion in more remote rural areas would increase the pool of potential candidates to take advantage of alternative pathways.

This also points to areas of need in terms of additional research. For example, the literature on initiatives such as teacher residencies and alternative certification is largely focused on urban contexts, and given the difficulty the most remote district in this study experienced in terms of accessing these possibilities, more scholarly attention should be given to possibilities for and successful models of these programs in rural remote areas. More research is also needed in current and prospective teachers in rural contexts. For example, in order for "grow-your-own initiatives"—seen as a promising effort for rural communities—to be successful, more research is needed on barriers and opportunities for college access and completion for individuals to increase the teacher pipeline. Finally, this study purposefully investigated local manifestations across diverse school systems. Future research might continue a focus on comparative work with the aim of highlighting relative staffing issues between neighboring districts within a state or districts that form a common border across state lines to further interrogate findings regarding geographic isolation, economic distress, and border poaching.

Conclusion

Amidst substantial attention to the nationwide teacher shortage in scholarship, media, and policy, little attention has been paid to the ways shortages manifest in local contexts, beyond generalized comments based on student demographics, geographic placement, and socioeconomic realities. Attending to the voice of district leaders, particularly their sensemaking of the teacher shortage at the local district level and their resulting responses provides a novel contribution to understanding the problem of teacher shortages and potential solutions in the face of local realities. In addition to providing this additional insight to the scholarship on teacher shortages, this research

also provides an important perspective for considering future research efforts and policy initiatives by highlighting the way in which state policies are inequitably responsive to local-level issues causing persistent teacher shortages.

“Ultimately,” Assistant Superintendent Rhodes argues, “it’s going to take a change in culture . . . at the state level . . . [a recognition that education] is an economic driver [that] changes your poverty level, your reliance on drugs . . . All of that shifts when you have a sound education system, and you invest in it.” Until that happens, these local leaders will continue to address local teacher shortages in the ways they feel they can, with hope that the children of their districts, and of West Virginia, can still succeed. As East County Personnel Director Maxwell says, “who’s going to teach our children in the future? That’s a question that needs to be answered sooner rather than later . . . And I’d like to be on the front end.”

References

- Achinstein, B., Ogawa, R. T., Sexton, D., & Freitas, C. (2010). Retaining teachers of color: A pressing problem and a potential strategy for "hard-to-staff" schools. *Review of Educational Research, 80*(1), 71-107. <https://doi.org/10.3102/0034654309355994>
- Adamson, F., & Darling-Hammond, L. (2012). Funding disparities and the inequitable distribution of teachers: Evaluating sources and solutions. *Education Policy Analysis Archives, 20*, 1-46. <https://doi.org/10.14507/epaa.v20n37.2012>
- Anderson, J., & Clark, J. (2018). *The economic status of women in the states*. Institute for Women’s Policy Research. Retrieved from <https://iwpr.org/publications/status-of-women-fact-sheet-2018/>
- Bland, P., Church, E., & Luo, M. (2016). Strategies for attracting and retaining teachers. *Administrative Issues Journal: Connecting Education, Practice, and Research, 4*(1), 545. <https://doi.org/10.5929/2014.4.1.2>
- Bluefield Daily Telegraph. (Oct. 22, 2018). Teacher shortage impacting WV classrooms. *The Register Herald*. Retrieved from https://www.register-herald.com/opinion/editorials/teacher-shortage-impacting-wv-classrooms/article_6660924a-5499-57d7-9edb-f4a46f006afd.html
- Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wycoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance and Policy, 1*(2), 176-216. <https://doi.org/10.1162/edfp.2006.1.2.176>
- Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Palo Alto, CA: Learning Policy Institute. Retrieved from https://learningpolicyinstitute.org/sites/default/files/product-files/Teacher_Turnover_REPORT.pdf
- Carver-Thomas, D., & Darling-Hammond, L. (2019). The trouble with teacher turnover: How teacher attrition affects students and schools. *Education Policy Analysis Archives, 27*(36). <http://dx.doi.org/10.14507/epaa.27.3699>
- Center for American Progress. (2018) *Talk poverty: West Virginia 2018*. Retrieved from <https://talkpoverty.org/state-year-report/west-virginia-2018-report/>
- Cowen, J. M., Butler, J. S., Fowles, J., Streams, M. E., & Toma, E. F. (2012). Teacher retention in Appalachian schools: Evidence from Kentucky. *Economics of Education Review, 31*(4), 431-441. <https://doi.org/10.1016/j.econedurev.2011.12.005>

- Darling-Hammond, L., & Podolsky, A. (2019). Breaking the cycle of teacher shortages: What kind of policies can make a difference? *Education Policy Analysis Archives*, 27(34). <http://dx.doi.org/10.14507/epaa.27.4633>
- Engel, M., & Cannata, M. (2015). Localism and teacher labor markets: How geography and decision making may contribute to inequality. *Peabody Journal of Education*, 90(1), 84-92. <https://doi.org/10.1080/0161956X.2015.988533>
- Eppley, K. (2009). Rural schools and the highly qualified teacher provision of No Child Left Behind: A critical policy analysis. *Journal of Research in Rural Education*, 24(4). Retrieved from <http://jrre.psu.edu/articles/24-4.pdf>
- Espinoza, D., Saunders, R., Kini, T., & Darling-Hammond, L. (2018). *Taking the long view: State efforts to solve teacher shortages by strengthening the profession*. Learning Policy Institute. Retrieved from https://learningpolicyinstitute.org/sites/default/files/product-files/Long_View_REPORT.pdf
- Frohlich, T.C. (2018, May 16). Teacher pay: States where educators are paid the most and least. *USA Today*. Retrieved from <https://www.usatoday.com/story/money/careers/2018/05/16/states-where-teachers-paid-most-and-least/34964975/>
- Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Palo Alto, CA: Learning Policy Institute.
- Hammerness, K., & Craig, E. (2016). "Context-specific" teacher preparation for New York City: An exploration of the content of context in Bard College's Urban Teacher Residency Program. *Urban Education*, 51(10), 1226-1258. <https://doi.org/10.1177/0042085915618722>
- Haycock, K. (2000). No more settling for less. *Thinking K-16*, 4(1), 11. Washington DC: Education Trust.
- Haycock, K., Lankford, H., & Olson, L. (2004). The elephant in the living room. *Brookings Papers on Education Policy*, (7), 229-263. <https://doi.org/10.1353/pep.2004.0002>
- Headden, S. (2014). *Beginners in the Classroom: What the Changing Demographics of Teaching Mean for Schools, Students, and Society*. Carnegie Foundation for the Advancement of Teaching. Retrieved from <https://files.eric.ed.gov/fulltext/ED556480.pdf>
- Helms Mills, J., Thurlow, A., & Mills, A. J. (2010). Making sense of sensemaking: The critical sensemaking approach. *Qualitative Research in Organizations and Management: An International Journal*, 5(2), 182-195. <https://doi.org/10.1108/17465641011068857>
- Hertnecky, D. (2018, Jul. 24). Number of Oklahoma emergency certified teachers reaches record. *News 9*. Retrieved from <http://www.news9.com/story/38721261/number-of-oklahoma-emergency-certified-teachers-reaches-record>
- Jackson, A. (2018, Sep. 20). Teacher shortage an ongoing problem in MS. *WDAM7*. Retrieved from <https://www.wdam.com/2018/09/21/are-there-enough-teachers-your-school-if-not-heres-why/>
- Kaka, S.J., Mitchell, R., & Clayton, G. (2016). *Fixing the educator shortage at the district level: School leaders can take concrete actions to help*. National School Boards Association. Retrieved from <https://www.nsba.org/newsroom/american-school-board-journal/asbj-august-2018/fixing-educator-shortage-district-level>
- Kercheval, H. (2017, Feb. 20). Teacher vacancies reach crisis level. *Metro News*. Retrieved from <http://wvmetronews.com/2017/02/20/teacher-vacancies-reach-crisis-level/>

- Klein, E. J., Taylor, M., Onore, C., Strom, K., & Abrams, L. (2013). Finding a third space in teacher education: Creating an urban teacher residency. *Teaching Education, 24*(1), 27-57. <https://doi.org/10.1080/10476210.2012.711305>
- Laczko-Kerr, I., & Berliner, D. C. (2002). The effectiveness of “Teach for America” and other under-certified teachers. *Education Policy Analysis Archives, 10*, 1-53. <https://doi.org/10.14507/epaa.v10n37.2002>
- Leachman, M., Masterson, K., & Figueroa, E. (2017). *A punishing decade for school funding. Center on Budget and Policy Priorities*. Retrieved from <https://www.cbpp.org/research/state-budget-and-tax/a-punishing-decade-for-school-funding>
- Learning Policy Institute. (2018). *Understanding teacher shortages: 2018 update*. Retrieved from <https://learningpolicyinstitute.org/product/understanding-teacher-shortages-interactive>
- Lochmiller, C. R., Adachi, E., Chesnut, C. E., & Johnson, J. (2016). *Retention, Attrition, and Mobility Among Teachers and Administrators in West Virginia (REL 2016-161)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Education Laboratory Appalachian. Retrieved from <http://ies.ed.gov/ncee/edlabs>.
- Maitlis, S. (2005). The social processes of organizational sensemaking. *Academy of Management Journal, 48*(1), 21-49. <https://doi.org/10.5465/amj.2005.15993111>
- Maitlis, S., & Christianson, M. (2014). Sensemaking in organizations: Taking stock and moving forward. *Academy of Management Annals, 8*(1), 57-125. <https://doi.org/10.5465/19416520.2014.873177>
- Maitlis, S., & Sonenshein, S. (2010). Sensemaking in crisis and change: Inspiration and insights from Weick (1988). *Journal of Management Studies, 47*(3), 551-580. <https://doi.org/10.1111/j.1467-6486.2010.00908.x>
- Merriam, S. B., & Tisdell, E.J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). San Francisco, CA: Jossey Bass.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. (3rd ed.) Los Angeles, CA: Sage Publications.
- Miller, L. C. (2012). Situating the rural teacher labor market in the broader context: A descriptive analysis of the market dynamics in New York State. *Journal of Research in Rural Education, 27*(13), 1-31. Retrieved from <http://jrre.psu.edu/articles/27-13.pdf>.
- Missouri Economic Research and Information Center. (2018). *Cost of living data series: Second quarter 2018*. Retrieved from https://www.missourieconomy.org/indicators/cost_of_living/
- Murphy, P., DeArmond, M., & Guin, K. (2003). A national crisis or localized problems? Getting perspective on the scope and scale of the teacher shortage. *Education Policy Analysis Archives, 11*, 23. <https://doi.org/10.14507/epaa.v11n23.2003>
- National Association of State Budget Officers. (2017). *State expenditure report: Examining fiscal 2015-2017 state funding*. Retrieved from https://higherlogicdownload.s3.amazonaws.com/NASBO/9d2d2db1-c943-4f1b-b750-0fca152d64c2/UploadedImages/SER%20Archive/State_Expenditure_Report__Fiscal_2015-2017_-S.pdf
- National Center for Educational Statistics. (2017). Table 230.70. Percentage distribution of enrollment in public elementary and secondary schools, by race/ethnicity and state or jurisdiction: Fall 2000 and fall 2015. Retrieved from

- https://nces.ed.gov/programs/digest/d17/tables/dt17_203.70.asp?referer=raceindicators
- National Education Association. (2017). *Rankings & Estimates: Rankings of the states 2016 and estimates of school statistics 2017*. Retrieved from http://www.nea.org/assets/docs/2017_Rankings_and_Estimates_Report-FINAL-SECURED.pdf
- Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.) Los Angeles, CA: Sage Publications.
- Podolsky, A., Kini, T., Darling-Hammond, L., & Bishop, J. (2019). Strategies for attracting and retaining educators: What does the evidence say? *Education Policy Analysis Archives*, 27(38). <http://dx.doi.org/10.14507/epaa.27.3722>
- Podolsky, A., & Sutcher, L. (2016). *California teacher shortages: A persistent problem*. Learning Policy Institute. Retrieved from https://learningpolicyinstitute.org/sites/default/files/product-files/California_Teacher_Shortages_Persistent_Problem_BRIEF.pdf
- Reininger, M. (2012). Hometown disadvantage? It depends on where you're from: Teachers' location preferences and the implications for staffing schools. *Educational Evaluation and Policy Analysis*, 34(2), 127-145. <https://doi.org/10.3102/0162373711420864>
- Rowell, N. (2018, Aug. 15). Schools follow statewide trend of teacher shortage. *The Northside Sun*. Retrieved from <https://www.northsidesun.com/news-breaking-news/schools-follow-statewide-trend-teacher-shortage#sthash.cUupqXeu.dpbs>
- Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research*, 72(3), 387-431. <https://doi.org/10.3102/00346543072003387>
- Spillane, J. P., & Thompson, C. L. (1997). Reconstructing conceptions of local capacity: The local education agency's capacity for ambitious instructional reform. *Educational Evaluation and Policy Analysis*, 19(2), 185-203. <https://doi.org/10.3102/01623737019002185>
- Stephenson, H. (2018, Aug. 11). Despite pay raises, teacher vacancies remain a problem for Tucson schools. *Tucson.com*. Retrieved from https://tucson.com/news/local/despite-pay-raises-teacher-vacancies-remain-a-problem-for-tucson/article_cb81580c-8652-5c46-a419-d030be7cd8d7.html
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the US*. Learning Policy Institute. Retrieved from <https://learningpolicyinstitute.org/product/coming-crisis-teaching>.
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2019). Understanding teacher shortages: An analysis of teacher supply and demand in the United States. *Education Policy Analysis Archives*, 27(35). <http://dx.doi.org/10.14507/epaa.27.3696>
- Taei, S., Goldring, R., & Spiegelman, M. (2018). *Characteristics of public elementary and secondary school teachers in the United States: Results from the 2015–16 National Teacher and Principal Survey*. National Center for Education Statistics. Retrieved from <https://nces.ed.gov/pubs2017/2017072rev.pdf>
- Trotter, M. (2018, Aug. 13). Survey finds Oklahoma teacher shortage hasn't improved much since 2017. *Public Radio 89.5*. Retrieved from <http://www.publicradiotulsa.org/post/survey-finds-oklahoma-teacher-shortage-hasnt-improved-much-2017>

- U.S. Census Bureau. (2018). *QuickFacts West Virginia*. Retrieved from <https://www.census.gov/quickfacts/wv>
- U.S. Census Bureau. (2015). Public education finances: 2013. Table 1. Retrieved from <https://www.census.gov/content/dam/Census/library/publications/2015/econ/g13-aspef.pdf>
- U.S. Department of Education, National Center for Education Statistics. (2016). Common Core of Data (CCD), Public Elementary/Secondary School Universe Survey, Provisional Version 1a, and the NCES Education Demographic and Geographic Estimates (EDGE), Public Elementary/Secondary School Universe - Geographic Data, 2014-15.
- U.S. Department of Education. (2017). *2017 Title II Report: West Virginia*. Washington, DC: Author. Retrieved from <https://title2.ed.gov/Public/Report/StateHome.aspx>.
- Viadero, D. (2018, Jan. 23). Teacher recruitment and retention: It's complicated. *Education Week*. Retrieved from <https://www.edweek.org/ew/articles/2018/01/24/teaching-shortages-many-answers-for-a-complex.html>
- Ward, J. (2018, Sep. 28). Oregon's teacher shortage is getting worse. *The World*. Retrieved from https://theworldlink.com/news/local/education/oregon-s-teacher-shortage-is-getting-worse/article_1af6835a-c15c-50cd-b7b4-f197ebe358aa.html
- Weick, K.E. (1995). *Sensemaking in Organizations*. Thousand Oaks, CA: Sage Publications.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16(4), 409-421. <https://doi.org/10.1287/orsc.1050.0133>
- West Virginia Department of Education. (2017). *Approval of Educator Preparation Programs: Policy 5100*. Charleston, WV: Author.
- West Virginia Department of Education. (2018). *Alternative Programs for the Education of Teachers: Policy 5901*. Charleston, WV: Author.

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