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Systemic Approaches for Professional Development on Diverse Learners in Rural Communities

Elizabeth Thorne Wallington and Adrienne Johnson

While rural communities are not monolithic, many have seen recent shifts in demographics from historically homogenous populations to more racially, culturally, and linguistically diverse residents (e.g., Sharp & Lee, 2017; Brenner, 2016). Such shifts can occur very rapidly as new regional economic, social, or political forces emerge and are particularly impactful on educational communities which may have little time to adjust to the distinct needs of culturally and linguistically diverse students (Hansen-Thomas et al., 2016). Without clear systems for addressing such changes, reactionary policies to address the accompanying conflict can establish marginalized communities, deficit-based perspectives, and structural inequities (Lee & Sharp, 2017). As an alternative approach, this paper outlines promising practices for systemic approaches to addressing the ongoing professional development needs for teachers in rural communities who are supporting students from increasingly diverse backgrounds. These practices provide the support and professional development that is needed to meet emerging student needs and strengthen educators' self-efficacy (Flores et al., 2008) in relation to working with diverse populations. Research addressing the specific needs of a growing number of rural districts with low-incidence populations of students who are learning English as an additional language, known as "English learners" or "ELs," is limited. This paper, then, focuses on state-level teacher certification policies and accompanying postsecondary teacher training programs that are designed to ensure that teachers are prepared to meet the needs of students who are learning English as an additional language.

Theoretical Background

Public health, public policy, and education fields have all found differential impacts of federal and state policies on rural populations as compared to urban populations (e.g., Mcfarland, 2018; Jones et al., 2009). Examining the impacts of state policy on rural districts is particularly important given rapid demographic changes occurring in rural school districts nationwide (Kreck, 2014). Previous research on rural education has found significant gaps in student achievement for a variety of subgroups, including English learners (ELs) (Johnson et al., 2014). As historically homogeneous rural districts encounter burgeoning enrollments from culturally and linguistically diverse subgroups, discernable gaps in EL services across districts develop (Kreck, 2014), and funding formulae are consistently insufficient to meet EL needs (Jimenez-Castellanos & Topper, 2012). Because funding formulae are often based on group size and EL populations often represent a minority of overall rural enrollment, districts with a low incidence of ELs have unique challenges (Hill & Flynn, 2004). These funding and concomitant policy constraints lead to differences in structural marginalization between urban and rural schools (Liggett, 2010). While there are a range of professional development practices that have been identified to support ELs in rural schools (e.g., Hamann & Reeves, 2013; Kreck, 2014; Haneda & Wells, 2012; Donnelly & Flynn 2004), schools with low-EL populations require a nuanced approach (Christianson, 2016).

Teacher preparation is consistently found to impact student achievement outcomes (e.g., López et al., 2013), yet there is no nationally agreed upon policy for teacher certification requirements related to English learners (ELs). Instead, states must establish a uniform set of requirements to be applied state-wide. As a result, due to local differences in student composition and district needs, policies for teacher certification at the state level can have differing and unintended impacts at the local district level. Rigorous certification requirements can create obstacles for districts that struggle to fill vacancies or cannot fund additional certification. For instance, fewer first-year teachers in rural districts have taken courses on supporting ELs, as compared to first-year teachers in urban districts (Taie & Goldring, 2020). As an alternative, some states have sought to reduce barriers to certification, such as by eliminating all required coursework and only requiring teachers to pass a specified standardized test. While reduced certification requirements help fill open positions and address immediate needs (Menken & Antunez, 2001), this approach has been found to be related to reduced EL achievement (Johnson & Thorne Wallington, 2021). These impacts on EL achievement have been shown to be moderated by place, indicating that the impacts of state teacher certification requirements for teachers of English learners have differing effects, depending on the percent of school-age English learners living in rural areas (Thorne Wallington & Johnson, 2021).

Promising Practice

The current promising practice provides an example of how a logic model framework (Figure 1) can be used to develop a sustainable system of professional development for rural districts undergoing demographic shifts. The base logic model framework in Figure 1 outlines a multi-faceted approach to meeting rural teacher professional development needs at the state and local levels, highlighting the importance of accounting for and adapting to the diversity in local needs depending on the local demographics, context, geography, and other factors. The current promising practice focuses on the role of postsecondary institutions in helping to support the professional development and certification needs of rural districts with emerging populations of English learners, in the pursuit of equitable educational experiences and academic growth for multilingual learners (e.g., *Inputs* – state policy, postsecondary courses and expertise, data on subgroups; *Activities* – collect and review data showing policy impacts on subgroups, propose flexible state policies; *Outputs* – evidence showing impacts of state policy on local policy on subgroups, adaptable professional development modules, targeted to local needs; *Outcomes* – educators trained to meet the needs of students from diverse and emerging populations).

Figure 1

Logic Model for Promising Practices in Addressing Emerging Rural Subgroups

Inputs	Activities	Outputs	Outcomes	Impact
State Policy	Collect & review subgroup data	Identified trends in growth or decline for subgroups	Agile and responsive policies, based on evidence	Equitable educational experiences and academic growth in students across all subgroups in local contexts
Local/District Policy	Collect & review data showing policy impact on subgroups	Evidence showing impacts of state and local policy on subgroups		
Postsecondary courses and expertise	Establish independent advisory boards	Annual recommendations based on trends and data	Educators trained to meet the needs of students from diverse and emerging populations	
Local Stakeholders (administration, teachers, students, families)	Establish flexibility in state and local policy	Adaptable professional development models, targeted to local needs		
Data on subgroups	Annual review and revision of professional development models			

Inputs and Activities. In order to determine how to best meet the localized needs of rural communities, we first had to better understand the relationships between certification requirements and rural EL achievement. Specifically, this initial investigation examined whether the effects of teacher certification requirements are moderated by place (i.e., rural vs. urban communities). With this aim, we gathered data from the U.S. Census Bureau and created choropleth maps representing the overlap between EL population and rural classification (Figure 2). We then created a new independent variable denoting the percent of school age population living in a rural area, which was needed to measure distributions of student populations across states. This new variable was then included in the models to show if a link existed between rural/urban status and EL teacher certification requirements (see Table 1).

To elucidate the teacher certification requirements by state, we searched state education department websites, contacted state departments of education, and coded requirements based on the variables listed in Table 1. Because states offer a variety of EL certification types, we focused our analyses on traditional (as opposed to alternative) certification routes. Within the traditional certification options, we examined the type of EL certification with the least requirements (i.e., the minimum required to become traditionally EL certified in the state). Because many of the variables are binary conditions (i.e., coursework required or not required) the variables were coded as dummy variables with a binary condition of 0 or 1.

We obtained EL achievement data from the NAEP database. We used 8th grade English Language Arts and Math measures because these data are widely reported and allow for the best measurement of academic language proficiency. One limitation is that these data are only collected for certain districts across the US, all of which are urban. Thus, we used state achievement data to examine specific states that indicated a significant urban/rural dichotomy. Through this multi-step analysis, using two sources of achievement data, we were able to capture both broad relationships and nuanced district-level relationships in specific states.

Data were geocoded and then linked to TIGER shapefiles. The U.S. Census provides all census data projected to the district level, allowing for articulation of the school composition factors at the district level, including specifying district characteristics in relation to the urban/rural dichotomy.

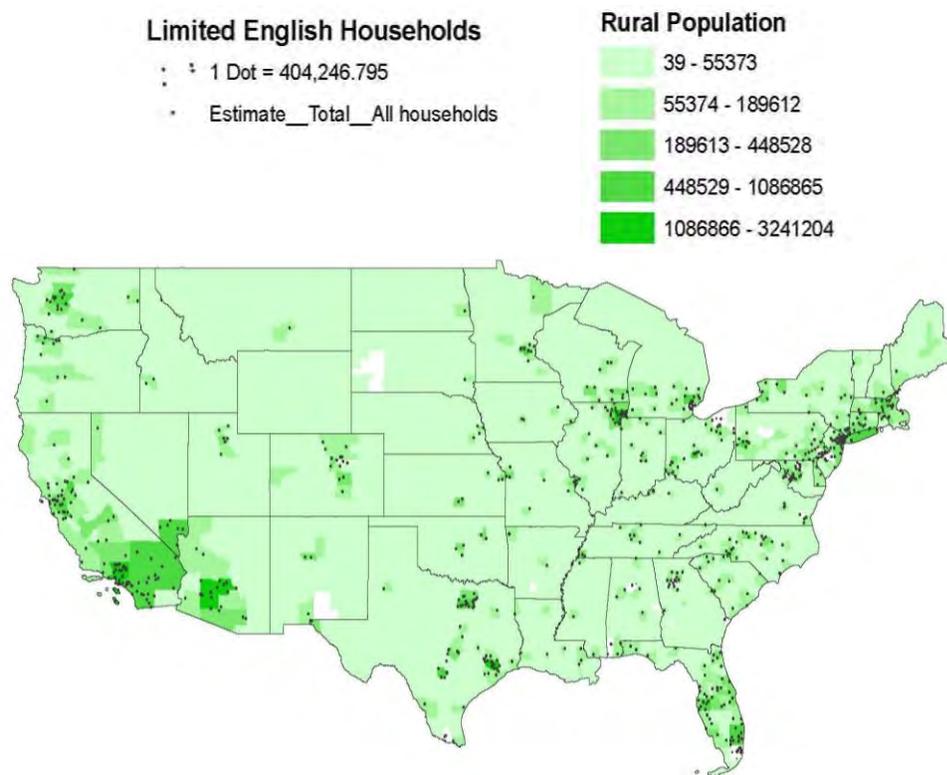
ArcGIS software was used to map the factors for cluster analysis to analyze rural population and limited English households. Then, Ordinary Least Squares and Geographic Weighted Regression was performed for each relationship. Correlations were examined for all factors listed in Table 2 and EL achievement based on the 8th grade ELA and Math NAEP exams. Geographic Weighted Regression was used to better understand how location and geography modified those relationships. Each GWR was mapped to show the R^2 s and the geographic weights were used to determine nonstationarity in relationships across districts. Stationarity refers to the idea that relationships are stable across a geographic area (Fotheringham et al., 2002). The local R^2 values were mapped, as were the statistically significant districts and the t-value beta coefficients. In order to control for the high family-wise Type I error rate, the Benjamini-Hochberg correction for multiple comparisons was applied (Thissen et al., 2002). The results of these regressions were mapped to show local R^2 values, significance, and nonstationarity. While the full results of

this analysis are beyond the scope of this promising practice paper, a few key takeaways are presented below.

Outputs. Figure 2 shows rural population by county with dots representing the number of limited English proficiency households. While many of the largest numbers of both rural population and limited English households are surrounding urban areas, some are in traditionally rural areas, demonstrating that the challenges of meeting EL needs are not limited to specific geographies. Areas represented by darker grayscale coloring indicate a higher rural population—that is, a larger number of households in a ZIP code defined by the U.S. Census Bureau as rural.

Figure 2

Rural Population and Limited English Proficiency Households



Second, we found effects of teacher certification requirements on EL achievement, when accounting for the urban-rural dichotomy. The significant models, shown in Table 1 below, demonstrate the correlation between certification requirements and EL outcomes when including a measure of the urban-rural dichotomy in the model. Interestingly, states that require only a test for certification have significant correlations as high as $R^2=0.19$ but when we mapped those significant relationships with the t -statistic, we found that those relationships were actually negative, which lends support to the idea that specific training is needed in order to meet the needs of rural ELs.

Table 1*Significant Correlations Between Certification Requirements and EL Achievement*

Explanatory variable	Grade/ Subject of NAEP Test	Global R² value (GWR, original model)	AICc (GWR, original model)	Global R² value (GWR, rural)	AICc (GWR, rural)
Test only	4 th Math	0.15	316.88	0.19	321.19
	4 th Reading	0.17	348.66	0.17	356.33
	8 th Math	0.14	341.19	0.13	327.11
Test & courses	4 th Math	0.08	312.54	0.10	319.43
	8 th Math	0.11	273.62	0.10	279.81
Coursework only	4 th Math	0.13	310.25	0.13	310.25
	8 th Math	0.10	273.11	0.11	278.13
Assessment	4 th Math	0.14	303.11	0.16	313.03
	4 th Reading	0.19	334.28	0.13	330.33
Culture	4 th Math	0.14	309.08	0.15	315.28
	4 th Reading	0.21	340.09	0.10	311.44

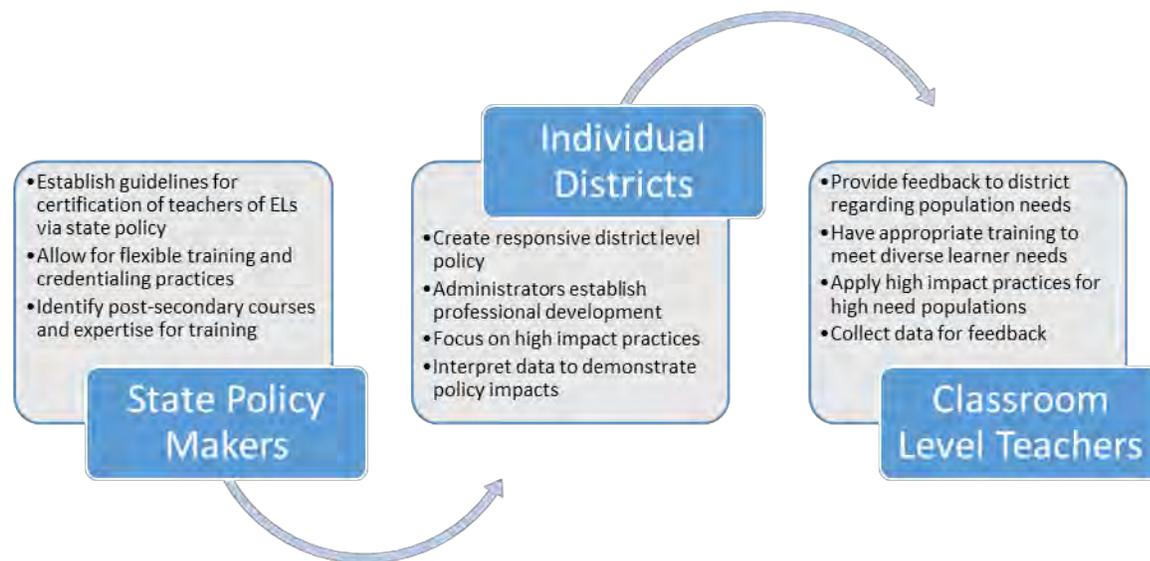
The results of this investigation demonstrate the importance of accounting for differences in local context when determining the impacts of state policy on EL achievement. Data analyses that do not account for nuances in demographics and local district needs may obscure impacts on low incidence and rural EL populations. The current research highlights the challenges related to establishing state-wide certification requirements that include adequate EL teaching preparation, while accounting for the unique challenges encountered by local contexts, and provide impetus for state policymakers to include stakeholders from a variety of local contexts when developing state certification frameworks. The differing impacts of certification requirements at the local level also support the need for a more nuanced and multi-tiered approach to EL teacher certification (Johnson & Thorne Wallington, 2021). By providing rural districts with local control over how to meet the needs of all educators, these districts will have the flexibility and opportunity to meet burgeoning student population needs. Local professional development models also avoid approaches such as test-only certification routes that are correlated with lower EL outcome measures, including in rural areas (Johnson and Thorne Wallington, 2021). While intended to address immediate local needs, research indicates that a test-only approach does not provide teachers with the necessary tools to best serve ELs.

Recommendations

Based on the results of the current project, we find a need to create adaptable professional development models, targeted to local needs. Our recommended model addresses the changing populations of rural districts by creating a codified yet flexible process by which state and district leaders can work together to best meet the needs of burgeoning and low-incidence EL populations in rural districts (see Figure 3).

Figure 3

Sustainable and Adaptable Professional Development Models



Currently, teacher certification of ELs is established at the state level, which leaves little flexibility for the rapid changes that rural districts often experience. In our model, states would create a flexible framework that would allow for a dynamic professional development experience emphasizing high-impact instructional practices. This would create a systematic approach involving leaders at all levels to best serve the needs of each community.

One such flexible framework at the state policy level would be to allow for leveled certification options. We recommend the implementation of a system that creates tiered and stackable certifications allowing educators to work toward full certification. These *microcredentials* can be implemented within districts and/or at the postsecondary level in partnerships with local universities. This combined approach will allow teachers to gain essential skills and knowledge for working effectively with ELs, while removing the barrier of a potentially more burdensome full-degree program. Microcredentials validate and certify a specified set of skills without needing a full, time-intensive degree (Acree, 2016). Microcredentials can build toward a full degree or certification, allowing for flexible professional development models that accommodate local needs while ensuring that participants receive a minimum level of training in meeting local needs immediately (Hunt et al., 2019). This is particularly important for rural settings whose

access to professional development and funding may be limited. Participants can gradually build their knowledge and understanding over time, within accessible resources. District leaders and EL specialists can be held accountable for completing more advanced levels of training, including full degrees and certifications.

Creating responsive district-level policies and professional development models can also be initiated even before changes to state-level policies. According to a meta-analysis of 104 research papers reporting a total of 205 effects, professional development (PD) models are often adjusted to fit the needs of local context and “PD is more likely to be implemented with fidelity when interventions are aligned with schools’ needs and existing practices, and when planned around the limited time available to teachers” (Sims et al., 2021, p.6). Moreover, professional development that includes instructional coaching and strong teacher learning communities was found to be particularly impactful. In addition to adding flexibility at the state policy level, districts can identify teacher leaders to develop expertise in emerging populations, and those teacher leaders can then use their expertise to support more teachers toward effective practices for linguistically and culturally diverse students.

The implementation of these practices would need to be strategic. First, stakeholders, including those from diverse populations in rural districts that may be from low-incidence populations, must be included in the design of the professional development. Stakeholders at all levels (i.e., teachers, district administrators, and state policymakers) must all have a role in developing the implementation plan. Second, high impact practices must be identified (see Haneda & Wells, 2012; Markos, 2011). Specifically, the piecemeal approach that has been de facto policy at the state level needs to be rebuked through measured, planned, and flexible approaches. Districts need to identify challenges and opportunities based on their student demographics and with impact from teachers, and states need to provide the flexibility for districts to make those opportunities available for implementation. Finally, this practice is rooted in the significance of local control. As the research presented demonstrates, there is a high degree of variability in the demographics of individual districts across the urban-rural spectrum, and not all certification policies have equal efficacy. By empowering districts to meet their teachers’ and students’ needs, local control can be used efficiently and effectively through flexible state policies. While changing state policy is a long-term necessity, districts can benefit from additional research demonstrating the influx of ELs into rural communities, as well as best-practices for teaching low-incidence EL populations. Through proactive policies and forward-thinking, districts will be able to support all learners and teachers.

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