Defining and Describing Rural: Implications for Rural Special Education Research and Policy

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Abstract

A critical aspect of rural research is carefully defining and describing the rural context. This is particularly important in rural special education research because different definitions of rural may influence resource allocation, grant funding eligibility, and/or research findings. In order to highlight the importance of operationalizing rural, we discuss the challenges of defining rural, provide descriptions of commonly used definitions to familiarize readers with standardized coding schemes, and summarize an empirical example demonstrating the implications different definitions can have on rural special education research and policy. We conclude by providing recommendations for both producers and consumers of research.

Keywords: rural definition, rural special education, rural policy

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"When we get rural wrong, we reach incorrect research conclusions and fail to reach the people, places, and businesses our governmental programs are meant to serve" (Isserman, 2005, p. 467).

Rural researchers generally agree there is no single best definition that adequately measures the theoretical construct of rural (e.g., Coburn et al., 2007; Coladarci, 2007; Cromartie & Bucholtz, 2008; Hart, Larson, & Lishner, 2005; Howley, Theobald, & Howley, 2005). As a result, numerous definitions have been developed across and within disciplines, each with its own strengths and weaknesses. Whereas the variability in rural definitions is not an inherent limitation of rural research, failure to adequately define and describe rural makes it difficult, if not impossible, to confidently make comparisons, interpretations, or generalizations from the rich body of rural research studies. Further, such inconsistencies can have meaningful policy consequences, as rural definitions drive resource allocation, grant funding eligibility, policy decisions, research, and development.

To examine how rural is commonly defined in the special education literature, we conducted a review of the articles published in *Rural Special Education Quarterly* between 2011 and 2014. We did not include reprints, position papers, and papers presenting promising practices or viewpoints in our review. Of the 44 articles reviewed, 14 included standardized (i.e., federal-or state-based) definitions of rural. The remaining 30 articles either provided a narrative of the rural context (27

articles) or merely used the term rural without further description. The amount of information provided in narratives varied considerably, ranging from simply referring to the state or region of the country to providing a thorough description of the population (e.g., population size, socioeconomic status, cultural background, occupational information) and its ties to neighboring communities (e.g., distance to nearest urbanized area)

The results of our review suggest that defining rural is a topic deserving further attention in the rural special education literature. First, only a minority of articles included standardized definitions of rural, which may indicate that some researchers are not aware of such definitions. Even if researchers have a passing familiarity with certain standardized definitions, they may not be aware of fundamental differences and defining features across definitions or have knowledge of the full range of definitions that are available. Second, there was considerable variability in how rural was defined across articles. This was to be expected, as there is no single best definition of rural. Nevertheless, it reveals a need for rural definitions to be compared and contrasted in order to provide guidance as to which definition may be most appropriate for a given context and to help research consumers synthesize findings across studies that use different rural definitions. Third, a handful of articles provided little to no description of the

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rural context, implying that some researchers may not realize the extent to which the chosen operational definition of rural impacts the generalizability of study findings.

The purpose of our paper is to highlight the importance of carefully defining and describing the rural context in rural special education research. We begin by discussing challenges and common pitfalls related to operationalizing rural. Next, we provide a description of the standardized classification systems commonly used in the United States (U.S.) to operationalize rural. We draw across many disciplines to outline the variety of rural definitions used in research and policy that may be conducive to rural special education researchers' own goals. Then, we summarize an empirical example demonstrating the practical implications that different rural coding schemes can have on rural special education research and policy. Because standardized definitions may not be appropriate for all contexts, we also discuss narrative approaches for defining rural before concluding our paper with recommendations for rural special education researchers and research consumers.

Operationalizing Rural

The "operationalization of rurality has been a nagging problem" (Jordan & Hargrove, 1987, p. 15), and researchers have been calling for a more refined definition of rural as early as the mid-1960s (Ford, 1966). Given that rurality is multifaceted and difficult to describe-let alone define-a one-size fits all definition ranks somewhere between dictatorial and chimerical. Yet, the lack of a uniform definition presents a challenge to the field because the inferences made about rural populations can vary across operational definitions. Moreover, some rural education research fails to provide a definition or a clear understanding of how a study's authors operationalized rurality. Such omissions are problematic because failure to clearly label and define a key theoretical construct such as rurality invites misinterpretation, which threatens the validity of inferences one may generalize from the study.

Operationalizing rural is a matter of construct validity, which involves "understanding constructs and assessing them" (Shadish et al., 2002, p. 65). Rural researchers not only need to have a theoretical conceptualization of rural, but must also select contexts that manifest those beliefs or select a compatible rural classification system to assess them. The construct label of *rural* has tremendous "social, political, and economic implications" (p. 65) with different labeling schemes producing different research results and policy implementation outcomes. When several definitions are reasonable, it is up to the researcher to provide a precise explanation of the construct and tailor the research to a particular definition, thereby allowing future researchers to evaluate and critique how the construct, in this case rurality, was operationalized (Shadish et al., 2002).

Research endeavors can be hindered when constructs are not appropriately defined. This may occur when (a) a construct is defined too broadly, (b) a construct is defined too specifically, (c) the wrong construct is identified, or (d) a

multidimensional construct is incorrectly defined as a unidimensional construct (Mark, 2000).

The threat of defining rural too broadly is a concern when using classification systems that do not adequately address the important features of rural areas thought to drive the observed phenomenon. For instance, some standardized definitions conceptualize rural "by what is not—not urban, not metropolitan" (Isserman, 2005, p. 466) rather than by rural places' own characteristics. It is likely that certain aspects of rural settings are more important than others, making it difficult to establish the credibility of an overarching conclusion about rurality when different types of rural places are grouped together. Conversely, rurality may be defined too narrowly. Defining areas as rural only if they are particularly small and especially remote (i.e., frontier areas; Hart, 2012) may unnecessarily limit the generalizability of findings. A similar issue might occur when a study focuses on a single community. Although explicit detail about the experiences of a community allows readers to better understand the richness and context of that particular setting, the depth of understanding is consequently limited to that particular setting—leaving consumers of research without confidence as to whether the findings reflect a specific or general phenomenon. This problem is compounded if researchers fail to provide the information necessary for others to understand how a particular community falls within the diverse array of rural definitions.

The risk that an incorrect construct is identified or that multiple constructs are inappropriately reduced to a single construct is a serious concern in rural research. Several classification schemes group communities according to general metrics, such as population size and distance from an urbanized area, but other indicators of rural may be more relevant for a given context. For instance, if economic isolation is the proposed force of action, then commuting ties may be relevant to include in the demarcation of community types, but, if resources within the community are thought to be the determining factor, then the presence or absence of a selected institution may be a more appropriate marker.

All of these aspects contribute to the overarching concern that findings claimed as rural phenomena may not be truly rural. Without specific evidence to support a rural argument, researchers may claim to have found an "inherently rural" phenomenon (Coladarci, 2007) when, in fact, the identified phenomenon may be broader, narrower, or a different phenomenon entirely. This can be especially problematic when the criteria used to define rural are not optimal, are broad or heterogeneous, or are not clearly defined. For example, research conducted in communities classified as rural but that were, for convenience, located closest to the university where the research was coordinated might be more likely to reveal suburban themes than inherently rural processes.

These examples illustrate the importance of carefully conceptualizing and operationalizing rural and thoroughly explaining to the reader how the places included in a study exemplify the components of rurality deemed relevant for the issues at hand. Clear explication of the context, including but not limited to the persons and setting(s), is necessary in order to fully evaluate any research findings. The burden of proof for claiming a rural phenomenon or generalizing conclusions to other rural contexts ultimately lands on the researcher.

Similar to the standpoint taken by other rural researchers (i.e., Bosak & Perlman, 1982; Coladarci, 2007), our objective is not to recommend one rural definition over another. Rather, we advocate for the refinement of current practices in defining rural areas by encouraging rural researchers to include more detail on the characteristics of the locale(s) used in their research. Coladarci (2007) described the appropriate amount of detail as "the provision of sufficient information about the context in which the research was conducted so that readers can make informed judgments regarding generalizability" (p. 2). Researchers may be able to accomplish this goal by utilizing standardized rural classification schemes or providing a complete narrative description elucidating the researchers' potentially unique definition of rural place. Without this information, the research consumer has to make assumptions as to what constitutes rural, leaving the door open for misinterpretation of the underlying construct.

Standardized Rural Classification Schemes

To better understand how rural is conceptualized and defined across different areas of research, we collected

evidence from several sources. First, we reviewed recent editions of *Journal of Research in Rural Education*, *Journal of Rural Health*, *Journal of Rural Sociology*, *Rural Special Education Quarterly*, and *The Rural Educator*. Second, we conducted Internet searches and reviewed previous literature summarizing rural coding schemes (Arnold, Biscoe, Farmer, Robertson, & Shapley, 2007; Davis & Lohse, 2011; Hart, 2012; Hart et al., 2005; U.S. Department of Agriculture, Economic Research Service, n.d.-e).

Below, we provide summary information regarding the strengths and limitations of existing classification systems and include tables highlighting the rural classification schemes we believe are most salient to rural special education researchers. To aid the reader, we have organized our discussion by the geographic unit (e.g., counties, census tracts) of the scheme. Please note that the classification schemes listed in text are a small subset of available options and are limited to a U.S. sample of coding schemes. Regardless of the coding scheme or national origin of the coding methodology, our recommendations regarding the geographic unit and ability to generalize across contexts applies across research settings and countries.

In choosing among the rural definitions, researchers must consider two major questions: (a) What community characteristics are important in my study's conceptualization of rurality? and (b) What level of classification is most appropriate for my study's objectives? These questions have direct implications for the degree to which rural research generalizes across contexts because research inferences only extend

Table 1Commonly Used County Level Classification Systems

Code	Organization	Coding Terminology	General Description	
Metropolitan and Micropolitan Statistical Areas	Office of Management and Budget (OMB) ^{1,2}	Metropolitan Statistical Areas	Urbanized Area with population of at least 50,000, plus adjacent territory with commuting ties.	
		Micropolitan Statistical Areas	Urban Cluster with population of 10,000 but less than 50,000, plus adjacent territory with commuting ties.	
		Outside Core Areas	Counties with less than 10,000.	
Rural-Urban Continuum Codes (Beale Codes)	Economic Research Service, United States Department of Agriculture (USDA) ³	Metropolitan (metro)	Three metro codes: (a) 1 million or more individuals, (between 250,000 and 1 million persons, and (c) less than 250,000 persons.	
		Nonmetropolitan (nonmetro)	Six codes created with two-step process. Counties divided into three categories based on population (urban population of 19,999 or more persons, 2,500 to 20,000 persons, or less than 2,500 persons) and then by adjacency to metro areas.	
Urban Influence Codes	Economic Research Service, United States Department of Agriculture (USDA) ⁴	Metropolitan	Two codes based on population size: (a) large (more than 1 million) and (b) small (less than 1 million).	
		Nonmetropolitan	Nine codes for OMB's micropolitan and noncore areas. Groups delineated based on population and distance from large urban area.	

Note. 1U. S. Census Bureau (n.d.-a, n.d.-c; 2012). 2U. S. Office of Management and Budget (2000, 2010, 2013). 3U. S. Department of Agriculture, Economic Research Service (n.d.-b). 4U.S. Department of Agriculture, Economic Research Service (n.d.-d).

to the indicators and geographic units represented in a particular rural coding scheme. We expand on these points in our examples for choosing among rural definitions.

County Level Classification Systems

As shown in Table 1, there are several U.S. federal coding systems that classify rural and urban areas using county level data. A benefit of classifications by this geographic unit is that county level information is the smallest unit by which annual economic statistics exist (Isserman, 2005). A limitation, however, is that counties often contain a mixture of rural and urban populations. Specifically, county level classification schemes can be problematic when county lines do not closely match the delineation of communities. For instance, the Grand Canyon is designated as metropolitan simply because a large city happens to be located in the same county (Isserman, 2005). Isserman refers to this problem as the "county trap" (i.e., when communities are misclassified due to differences within the county). This phenomenon also is described as overbounding (Morrill, Cromartie, & Hart, 1999). Overbounding occurs when rural areas are classified as metropolitan due to county level geography, despite not having strong ties to the urban core in the county.

A related caution with county level classifications is the tendency to *overestimate* the degree of rurality in metropolitan counties, a problem referred to as underbounding (Hart et al., 2005). Underbounding occurs when suburban areas at the edge of one county may have strong commuting ties to the next county, but these connections are masked because the suburban county fails to meet the urbanized area or population density requirements (Morrill et al., 1999). Both overbounding and underbounding suggest potential for county level classification systems to be less sensitive to the heterogeneity of communities within counties.

Sub-County Classification Systems

Table 2 lists coding systems that are based on smaller geographical units such as census tracts, census blocks, and/or ZIP codes. Census tracts are statistical subdivisions of a county that vary depending on the population density of the area (U.S. Census Bureau, n.d.-b, n.d.-d). Tracts usually include between 2,500 and 8,000 persons and do not cross county boundaries (n.d.-b). Census tracts are the smallest classification units from which commuting flow estimates are available (U.S. Department of Agriculture, Economic Research Service, n.d.-a). The level of precision afforded by these geographic units means that sub-county classification systems have fewer problems related to the "county trap." Nevertheless, there are drawbacks to these sub-county level systems. For instance, classification systems at the sub-county level have an increased potential for changes over time because tracts and zip codes tend to be less stable than counties (Coburn et al., 2007). It is not uncommon to have multiple tracts within counties and/or ZIP codes, which add to the complexity of the data. Also, some data (e.g., health and economic information) may be in ZIP code format compared to other classification levels because only a limited number

Table 2Commonly Used Sub-County Level Classification Systems

Code	Unit	Organization	Coding Terminology	General Description
Urban and rural classification	Census tracts and/or blocks	Department of Commerce, Bureau of the Census (DOC) ^{1, 2}	Urbanized Areas (UA)	Urban area with a population of 50,000 or more people.
			Urban Clusters (UC)	Urban area with a population of at least 2,500 but less than 50,000 people.
			Rural	Territory located outside of urbanized areas and urban clusters.
Rural-Urban Commuting Area Codes (RUCA)	Census tract or zip code	Sponsored and funded by the United States Department of Agriculture (USDA) and the Health Resources and Services Administration's Federal Office of Rural Health Policy (ORHP) ^{3,4}		RUCA codes divided into 33 different categories, but two popular classification systems: (a) four category and (b) seven category. Categories based on the OMB's metropolitan/micropolitan definition, commuting ties, and population size.
			Four category	RUCA four category system includes (a) urban, (b) large rural, (c) small rural, and (d) isolated.
			Seven category	RUCA seven category system includes (a) urban core, (b) other urban, (c) large rural core, (d) other large rural core, (e) small rural core, (f) other small rural core, and (g) isolated rural.

Note. ¹U.S. Census Bureau (n.d.-b, n.d.-d;). ²U.S. Office of Management and Budget (2000, 2010, 2013). ³U.S. Department of Agriculture, Economic Research Service (n.d.-a). ⁴Washington, Wyoming, Alaska, Montana, and Idaho Rural Health Research Center. (n.d.-b; n.d.-c).

of government agencies use census tract level information (Coburn et al., 2007; Hart et al., 2005; Ponce, 2013). Although sub-county level information provides a more precise measure of rurality compared to county level data, the drawbacks may limit the utility of these systems for rural researchers.

Educational Jurisdiction Classification Systems

Local education agencies (LEAs; i.e., school districts) and schools are classified using coding schemes developed by the National Center for Education Statistics (NCES). Metro-centric locale codes were used from the 1980s until 2006, and, although this coding scheme was replaced by the urban-centric locale codes in 2006, it still serves as an inclusion measure for one of the main federal programs for rural schools-the Rural Education Achievement Program (REAP; Apling & Kuenzi, 2008; U.S. Department of Education [DOE], n.d.-a, n.d.-b, n.d.-c, n.d.-d; Strange, Johnson, Showalter, & Klein, 2012). One of the many improvements of the urban-centric locale system over the metro-centric codes is the ability to distinguish remotely isolated rural schools from rural schools closer to urban cores (U.S. DOE Institute of Education Sciences [IES] National Center for Education Statistics [NCES], n.d.-c). Urban-centric locales have been developed using geocoding, a process for determining the precise location of locales (in this case, schools and school districts) based on longitude and latitude. Such precision is particularly important when trying to differentiate between school districts located just outside an urban area and those located in more distant or remote areas (Apling & Kuenzi, 2008). Educational jurisdiction systems are useful for education researchers who are interested in school-related issues because these schemes facilitate policy decisions and/or research conclusions at the school and/or school district level.

Practical Implications of Choosing Among Rural Definitions

It is clear from the above sections that a community's rural designation in any given study or policy implementation is dependent upon the chosen operational definition of rural rather than representing an immutable truth. Several studies (e.g., Apling & Kuenzi, 2008; Coburn et al., 2007; Hart et al., 2005; Jordan & Hargrove, 1987; Koziol et al., 2015; Miller, 2010; West et al., 2010) have examined the comparability of rural research findings across different rural definitions to demonstrate the practical implications of choosing a particular definition. We add to these comparisons by providing an example specific to rural special education research.

Utilizing the Elementary/Secondary Information System (ELSi; U.S. DOE IES NCES, n.d.-b), we identified all public elementary and secondary special education schools in the U.S. that were operational during the 2012-13 school year (N = 2,046). We then assigned the schools geographical codes as determined by each of three standard-

Table 3Commonly Used Educational Jurisdiction Level Classification Systems

Code	Organization	Coding Terminology	General Description		
Metro- Centric Locale Codes	National Center for Education Statistics (NCES) ¹	City	Four city codes (large, mid-size, urban fringe large city, urban fringe mid-size city) based on population size and proximity to metropolitan statistical area (MSA).		
		Town	Two town codes (large, small) based on population size and located outside of a MSA.		
		Rural	Two rural codes (outside MSA, inside MSA) based on proximity to MSA. Locations must be census-defined rural territory.		
Urban- Centric Locale Codes	National Center for Education Statistics (NCES) ²	City	Three city codes (large, midsize, small) based on population size. City schools and districts must be inside urbanized area inside principal city.		
		Suburb	Three suburban codes (large, midsize, small) based on population size. Suburban schools and districts must be outside principal city and inside urbanized area.		
		Town	Three town codes (fringe, distant, remote) based on distance from urbanized area. Town schools and districts must be inside urban cluster.		
		Rural	Three rural codes (fringe, distant, remote) based on distance from urbanized area. Rural schools and districts must be census-defined rural territory.		

Note. 1U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (n.d.-a). U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (n.d.-c).

ized rural classification systems: (a) Urban Centric Locale Codes, (b) Rural-Urban Commuting Area (RUCA) Codes, and (c) Rural-Urban Continuum Codes (RUCC). We obtained the Locale Codes, which classify schools directly, from ELSi. We condensed the 12 codes into 4 to define schools as city, suburban, town, or rural. The RUCA codes, on the other hand, classify census tracts or ZIP code areas rather than classify schools directly. We merged schools' ZIP codes (obtained from ELSi) with the ZIP version 2.0 RUCA codes updated in 2007 (Washington, Wyoming, Alaska, Montana, and Idaho Rural Health Research Center [WWAMI], n.d.-a). Using Categorization A (WWAMI, n.d.-d), we condensed the full set of codes into four, such that ZIP code areas, and consequently schools, were defined as urban focused, large rural city/town (micropolitan) focused, small rural town focused, or isolated small rural town focused. Like the RUCA codes, the RUCCs do not classify schools directly; rather, they classify counties. We merged schools' county information (obtained from ELSi) with the 2013 RUCCs (U. S. Department of Agriculture, Economic Research Service, n.d.-c) and condensed the 9 codes into 3. Counties, and consequently schools, were classified as metropolitan, non-metropolitan but urban (urban population > 2,500), or non-metropolitan and non-urban (completely rural or urban population < 2,500). We omitted a total of 43 schools from our descriptive analyses because they could not be assigned a code by at least one of the classification schemes.

Table 4 indicates the number of special education schools in each geographical context as determined by each classification scheme. The choice of rural definition clearly has an impact on the apparent distribution of special education schools across geographical contexts. Although there is some general overlap in codes, there are many seemingly discrepant classifications. For instance, several schools classified as rural by the Locale codes were classified as urban focused by the RUCA codes and metropolitan by

the RUCCs (138 and 162 schools, respectively). Likewise, 11 schools classified as isolated small rural town by the RUCA codes were, in turn, classified as metropolitan by the RUCCs. These findings highlight potential practical implications of the rural definition on rural special education research and policy implementation. Depending on the classification scheme, a special education school may or may not be considered rural and, consequently, may or may not be eligible for certain funding and may or may not be included in rural research.

Ultimately, there is no single best definition of rural; however, in choosing among definitions, researchers and policy-makers must weigh the advantages and disadvantages of each definition and consider the goals of the program or research study, funding availability, and policy or research applications. Careful attention to construct operationalization is key to ensuring that the construct is not defined too broadly or too specifically or incorrectly defined all together. In our example, using ZIP code area and county level information to classify schools' geography resulted in overbounding, such that rural schools were sometimes classified as urban due to their larger geographical ties. The definitions used in our example also may have been too broad, as we collapsed each of the full sets of codes into just 3 or 4 general categories. Such a reduction masks potentially important differences, such as differences in commuting patterns as provided by the full set of RUCA codes. On the other hand, the definitions may have been too narrow. For instance, we distinguished between small rural town and isolated small rural town for the RUCA codes, but an alternative approach is to collapse these areas into a single group.

Narrative Descriptions of Rural

Standardized rural classification schemes provide a systematic and well-established approach for defining rural. Yet, they are not the only approach for defining rural, and they may not even be the best approach given a particular

Table 4Number of Public Elementary/Secondary Special Education Schools in the United States by Geographical Context and Rural Classification System.

		Rural-Urban Commuting Area Codes				Rural-Urban Continuum Codes		
		Urban	Large Rural City/Town	Small Rural Town	Isolated Small Rural Town	Metro	Non-Metro (Urbanª)	Non-Metro (Non-Urban ^b)
Urban- Centric Locale Codes	City	679	11	0	0	690	0	0
	Suburb	658	9	1	0	667	1	0
	Town	60	162	108	6	95	240	1
	Rural	138	40	47	84	162	104	43
Rural- Urban Continuum Codes	Metro	1515	51	37	11			
	Non-Metro (Urbana)	20	171	117	37			
	Non-Metro (Non-Urban ^b)	0	0	2	42			

Note. We omitted schools from the analyses if they did not have a Rural-Urban Commuting Area Code (6 schools) or Rural-Urban Continuum Code (37 schools). ^aUrban population > 2,500. ^bCompletely rural or urban population < 2,500.

study context. Depending on study or program aims, researchers and policy-makers may determine that existing standardized definitions do not adequately preserve and measure the unique contexts of individual rural places. When this is the case, a narrative approach to defining rural may be more appropriate, particularly when the study is set in a single locale or a small number of locales.

The key to a narrative approach, and to defining rural in general, is to provide readers with sufficient detail about the study's geographic context. As discussed throughout this paper, rural special education research does not always adequately describe the characteristics of the locale in which the research occurred. This may be due to the limitations of current coding schemes or inadequate provision of detail regarding the settings. In such instances, it is often not possible for readers to fully understand the contextual environment in which a study took place.

In instances in which researchers anonymize the context to ensure participants' privacy, readers are not able to seek out additional descriptive information from other sources, emphasizing the need for this information to be embedded within the research itself. Even if it is possible for readers to find this information, responsibility falls upon the researcher to provide it rather than the reader to pursue it. The Publication Manual of the American Psychological Association (APA Manual; 2010) notes that, as a rule, it is important to describe groups "as specifically as possible, with particular emphasis on characteristics that may have bearing on the interpretation of results" (p. 29). The APA Manual goes on to state that, even if a characteristic is not used in an analysis, reporting participant characteristics provides readers with a more complete understanding of individuals in the sample and the degree to which results can be generalized.

We propose the term "local expertise" for situations in which rural researchers state that the research setting is rural but fail to describe how this classification was determined or provide enough evidence for the reader to evaluate the locale's rurality. In such situations, we do not question the researcher's designation; in contrast, we argue that more information is required to better understand the research and its implications. Authors should share their local expertise with the reader rather than expecting the reader to accept the authors' rural designation, which risks discontinuity of understanding. In contrast to the local expertise approach, a fuller explication of the locale's characteristics creates a vivid and powerful message about the research content and provides sufficient detail to convey the context for that research.

When possible, we recommend researchers provide details including but not limited to the four dimensions outlined by Brown and Schafft (2011) in their multidimensional approach to defining rural places. These dimensions include (a) population and settlement structure and landscape, (b) economy, (c) institutions, and (d) socio-cultural. Population and settlement information can include information regarding population size of a locale and the degree of geographic isolation. Economy

details include, but are not limited to, data regarding the diversity of economic activates, goods, and services of a particular place. Contextual information regarding the institutional spheres could include aspects related to the local government and socio-cultural data related to the social and cultural attitudes of rural people.

Recommendations

Rural special education research and policy depends on the operationalization of rural, so it is essential that we get rural right. Importantly, there is no one right definition of rural because rural is a multifaceted construct that does not afford a single categorization. Getting rural right does not mean picking one definition but, rather, providing clear, detailed information to readers so they understand how the rural context is delineated from other contexts. The ability to confidently interpret research findings and generalize them to other settings requires an unambiguous understanding of the context.

We recommend that rural researchers who are focusing on a small number of settings or a single setting specifically list salient characteristics of the locale(s) according to the four dimensions described by Brown and Schafft (2011). This allows other researchers and policy-makers to make sense of the research settings in a way that helps them fully judge the similarities to and differences from their own contexts of interest. In addition, we recommend that researchers list how the locale(s) are classified by at least one major classification system. This further situates the locales within a standardized definitional system and facilitates comparisons with other rural studies that used such classification systems.

For researchers examining a larger number of locales, full description of each locale may be infeasible. When this is the case, we recommend carefully choosing one of the existing standardized rural classification systems or fully detailing any locally developed definition of rural. These systems, whether well-established or well-described, provide consistency to facilitate comparisons. If possible, researchers also should include descriptive information about specific contextual features. Providing additional information beyond simple classifications helps to avoid the rural reductionism that Howley et al. (2005) warned against.

In sum, producers and consumers of research need to have an understanding of the rural context in order to fully evaluate the utility of rural special education research. The lack of a clear understanding of rural hinders the advancement of rural research because it makes it difficult to leverage the rich body of existing literature. These inconsistencies impact areas such as resource allocation, grant funding, research findings, and potential policy decisions. Providing more detail about the rural context will help advance the field by reducing the ambiguity behind the label of rural. By explicitly defining rural, researchers better operationalize their construct, thereby enabling future researchers to evaluate and critique the alignment between different conceptualizations of rural.

References

American Psychological Association (2010). *Publication manual of the American Psychological Association*. Washington, DC: Author.

Apling, R. N., & Kuenzi, J. J. (2008). Rural education and the Rural Education Achievement Program (REAP) overview and policy issues. Congressional Research Service (CRS) report for Congress (Order code: RL33804). Retrieved from http://nationalaglawcenter.org/assets/crs/RL33804.pdf

Arnold, M. L., Biscoe, B., Farmer, T. W., Robertson, D. L., & Shapley, K. L. (2007). How the government defines rural has implications for education policies and practices (Issues & Answers Report, REL 2007–No. 010). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from http://ies.ed.gov/ncee/edlabs

Bosak, J., & Perlman, B. (1982). A review of the definition of rural. *Journal of Rural Community Psychology*, 3, 3-34.

Brown, D. L., & Schafft, K. A. (2011). Rural people and communities in the 21st century: Resilience and transformation. Malden, MA: Polity Press.

Coburn, A. F., MacKinney, A. C., McBride, T. D., Mueller, K. J., Slifkin, R. T., Wakefield, M. K. (2007). Choosing rural definitions: Implications for health policy. *Rural Policy Research Institute Health Panel* (Issue Brief #2).

Coladarci, T. (2007). Improving the yield of rural education research: An editor's swan song. *Journal of Research in Rural Education*, 22, 1-9.

Cromartie, J., & Bucholtz, S. (2008). Defining the" rural" in rural America. *Amber Waves*, 6(3), 28. Retrieved from http://www.ers.usda.gov/amber-waves/2008-june/defining-the-%E2%80%9Crural%E2%80%9D-in-rural-america.aspx#. V7C VGTnbGc

Davis, J., & Lohse, C. (2011, June). Understanding the gradients of "rural": A guide to the various definitions of "rural" and their implications for states. Presentation developed by the Research, Development and Dissemination Service of the Chief Council of State School Officers for the Council of Chief State School Officers' Annual Rural Chiefs Meeting. Retrieved from http://opi.mt.gov/PUb/PDF/Superintendent/RuralityReport.pdf

Ford, T. R. (1966). Comment on Schnore's "The rural-urban variable: An urbanite's perspective." *Rural Sociology*, *31*, 149-151.

Hart, L. G., Larson, E. H., & Lishner, D. M. (2005). Rural definitions for health policy and research. *American Journal of Public Health*, 95, 1149-1155.

Hart, L. G. (2012). Frontier/remote, island, and rural literature review (Version 2.99). Retrieved from http://ruralhealth.und.edu/pdf/frontierreview.pdf

Howley, C. B., Theobald, P., & Howley, A. (2005). What rural education research is of most worth? A reply to Arnold, Newman, Gaddy, and Dean. *Journal of Research in Rural Education*, 20(18). Retrieved from http://www.jrre.psu.edu/articles/20-18.pdf

Isserman, A. M. (2005). In the national interest: Defining rural and urban correctly in research and public policy. *International Regional Science Review*, 28, 465 – 499.

Jordan, S. A., & Hargrove, D. S. (1987). Implications of an empirical application of categorical definitions of rural. *Journal of Rural Community Psychology*, 8, 14-29.

Koziol, N. A., Arthur, A. M., Hawley, L. R., Bovaird, J. A., Bash, K. L., McCormick, C., & Welch, G. W. (2015). Identifying, Analyzing, and Communicating Rural: A Quantitative Perspective. *Journal of Research in Rural Education*, 30(4), 1-14. Retrieved from http://jrre.psu.edu/wp-content/uploads/2015/03/30-4.pdf

Mark, M. M. (2000). Validity, realism, and the experimenting society. In L. Bickman (Ed.), *Validity and social experimentation: Donald Campbell's legacy* (Vol.1, pp. 141-166). Thousand Oaks, CA: Sage.

Miller, K. (2010). Why definitions matter: Rural definitions and state poverty rankings. *Rural Policy Research Institute: Data Brief.* Retrieved from http://www.rupri.org/Forms/Poverty%20 and%20Definition%20of%20Rural.pdf

Morrill, R., Cromartie, J., & Hart, G. (1999). Metropolitan, urban, and rural commuting areas: Toward a better depiction of the United States settlement system. *Urban Geography*, 20, 727-748.

Ponce, N. A. (2013). Measuring neighborhood effects and the use of geo-coded variables. Presentation for the CTSI Clinical Research Development Seminar. Retrieved from http://www.ctsi.ucla.edu/education/files/view/training/docs/Ponce_Neigborhood_Data_Sources_012213.pdf

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). Experimental and quasi-experimental designs for generalized causal inference. Boston, MA: Houghton, Mifflin and Company.

Strange, M., Johnson, J., Showalter, D., & Klein, R. (2012). Why rural matters 2011-2012: The condition of rural education in the 50 states. A report of the Rural School and Community Trust Policy Program. Retrieved from http://www.aplusala.org/uploadedFiles/File/WRM2011-12.pdf

- U. S. Census Bureau (2012). Statistical abstract of the United States: 2012 (Appendix II Metropolitan and micropolitan statistical areas: Concepts, components, and population). Retrieved from http://www.census.gov/prod/2011pubs/12statab/app2.pdf
- U. S. Census Bureau (n.d.-a). About metropolitan and micropolitan statistical areas. Retrieved from http://www.census.gov/population/metro/about/
- U. S. Census Bureau (n.d.-b). *Geographic terms and concepts:* Census tract. Retrieved from https://www.census.gov/geo/reference/gtc/gtc_ct.html
- U. S. Census Bureau. (n.d.-c). *Metropolitan and micropolitan statistical areas main*. Retrieved from http://www.census.gov/population/metro/
- U. S. Census Bureau. (n.d.-d). *Urban and rural classification*. Retrieved from https://www.census.gov/geo/reference/urban-rural.html
- U. S. Department of Agriculture, Economic Research Service (n.d.-a). 2010 Rural-urban commuting area codes: Documentation. Retrieved from http://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/documentation.aspx
- U. S. Department of Agriculture, Economic Research Service (n.d.-b). *Ruralurban continuum codes: Documentation*. Retrieved from http://www.ers.usda.gov/data-products/urban-influence-codes/documentation.aspx#.Uv5QSvldV1k

- U. S. Department of Agriculture, Economic Research Service (n.d.-c). 2010 Rural-urban continuum codes: Overview. Retrieved from http://www.ers.usda.gov/data-products/rural-urban-continuum-codes/.aspx
- U.S. Department of Agriculture, Economic Research Service (n.d.-d). *Urban influence codes: Documentation.* Retrieved from http://www.ers.usda.gov/data-products/urban-influence-codes/documentation.aspx
- U. S. Department of Agriculture, Economic Research Service (n.d.-e). What is rural? Retrieved from http://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural.aspx#.U3paza1dVqs
- U.S. Department of Education (n.d.-a). Flexibility and waivers. Retrieved from http://www2.ed.gov/nclb/freedom/local/flexibility/index.html
- U.S. Department of Education (n.d.-b). Rural and low-income school program: Eligibility. Retrieved from http://www2.ed.gov/programs/reaprlisp/eligibility.html
- U.S. Department of Education (n.d.-c). Rural education and achievement program. Retrieved from http://www2.ed.gov/nclb/freedom/local/reap.html
- U.S. Department of Education (n.d.-d). Small, rural school achievement program: Eligibility. Retrieved from http://www2.ed.gov/programs/reapsrsa/eligibility.html
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (NCES, n.d.-a). Common core of data: Identification of rural locales. Retrieved from http://nces.ed.gov/surveys/ruraled/definitions.asp
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (NCES, n.d.-b). *Elementary/secondary information system (ELSi)*. Retrieved from https://nces.ed.gov/ccd/elsi/
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (NCES, n.d.-c). Rural education in America: Prior urban/rural classification systems. Retrieved from http://nces.ed.gov/ccd/rural_locales.asp

- U. S. Office of Management and Budget (December 27, 2000). Standards for defining metropolitan and micropolitan statistical areas; Notice. *Federal. Register*, 65(249). Retrieved from http://www.whitehouse.gov/sites/default/files/omb/fedreg/metroareas122700.pdf
- U. S. Office of Management and Budget (June 28, 2010). 2010 Standards for delineating metropolitan and micropolitan statistical areas; Notice. *Federal Register*, 75(123). Retrieved from http://www.whitehouse.gov/sites/default/files/omb/assets/fedreg_2010/06282010_metro_standards-Complete.pdf
- U. S. Office of Management and Budget. (February 28, 2013). Revised delineations of metropolitan statistical areas, micropolitan statistical areas, and combined statistical areas, and guidance on uses of the delineations of these areas (OMB Bulletin No. 13-01). Washington, DC: Author. Retrieved from http://www.whitehouse.gov/sites/default/files/omb/bulletins/2013/b-13-01.pdf

Washington, Wyoming, Alaska, Montana, and Idaho Rural Health Research Center. (n.d.-a). *RUCA data*. Retrieved from http://depts.washington.edu/uwruca/ruca-download.php

Washington, Wyoming, Alaska, Montana, and Idaho Rural Health Research Center. (n.d.-b). *RUCA data: General methods*. Retrieved from http://depts.washington.edu/uwruca/ruca-methodology.php

Washington, Wyoming, Alaska, Montana, and Idaho Rural Health Research Center. (n.d.-c). RUCA data: Map classifications. Retrieved from http://depts.washington.edu/uwruca/ruca-maps.php

Washington, Wyoming, Alaska, Montana, and Idaho Rural Health Research Center. (n.d.-d). *Using RUCA data.* Retrieved from http://depts.washington.edu/uwruca/ruca-uses.php

West, A. N., Lee, R. E., Shambaugh-Miller, M. D., Bair, B. D., Mueller, K. J., Lilly, R. S., . . . Hawthorne, K. (2010). Defining "rural" for veterans' health care planning. *The Journal of Rural Health*, 26, 301-309.