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Innovations in Rural Special Education: Rural Context-Responsive High-Yield Practices

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Abstract

Nearly ten million U.S. students receive their education in rural schools, including students who receive special education and related services. Despite the important role that rural schools play in educating students with disabilities, rurality is often discussed through a deficit lens emphasizing barriers rather than the strengths found in rural communities. This article presents rural schools as strengths-based models and collaborators for contextually designed responsive practices that can inform the broader field of special education. Three university-school partnerships across North Dakota, Oklahoma, and Nevada that illustrate innovative approaches to recruiting, preparing, and retaining special educators in rural communities are presented. Collectively, these programs highlight how innovations developed within rural communities can extend beyond addressing local challenges and contribute to adaptable, context-responsive support for students, educators, and communities.

Keywords: rural special education; rural education; evidence-based practice; rural education research

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1. Rural Context-Responsive, High-Yield Special Education Practices

Federally designated rural areas comprise 97% of U.S. land and can be characterized by features such as sparse populations, low housing density, and distance from urban centers (U.S. Census Bureau, 2017). Although often grouped under a common classification, U.S. rural communities are complex and highly diverse, and can vary substantially across characteristics such as culture, language, socioeconomic conditions, geography, race, and ethnicity (Afifi et al., 2022; Showalter et al., 2025). As a result, rural communities reflect distinct strengths and needs shaped by their local contexts. The local development of socially significant educational interventions, programs, and practices therefore can require creativity and flexibility for communities to identify and implement approaches that make sense for their specific circumstances (McLucas et al., 2025). Applied to rural special education training and service delivery, socially significant research and practice may require diverse approaches that are responsive to the specific needs and contexts of individual communities and schools. A variety of approaches may emerge as communities address special education system needs in ways that are grounded in their local contexts.

In the fall of 2022, nearly ten million U.S. students attended an elementary or secondary school in a rural area, representing almost 20% of the total public-school enrollment in the United States (U.S. Department of Education, 2026). A 2023 analysis of student population

data showed that approximately 15% of rural students received special education and related services under IDEA 2004 (National Center for Education Statistics, 2023). This analysis also showed that the percentage of students with disabilities in rural areas was higher than the national percentage (14%) of students receiving specialized services, and this difference was especially marked in rural areas with a "remote" designation (16%). Compounding these service needs, shortages of special educators and related service providers are particularly pronounced in rural areas of the country (Ruppar et al., 2024).

Although a significant proportion of U.S. students with disabilities are served in rural schools, relatively few scholarly and practitioner publications exist to describe the outcomes of special education programs and initiatives in rural settings (American Council on Rural Special Education, 2025), including preparation and training of rural special education personnel. The relative scarcity of research and practical information about rural special education mirrors (and contributes to) the "big city bias" that is prevalent in education research (Welsh, 2025, p. 1531). A limited body of information such as this may be susceptible to biases (Hott et al., 2025). That is, in the absence of a depth of information from various perspectives and examinations, particular assumptions or narratives may become dominant because there is insufficient evidence available to provide critique (conceptual or empirical) or alternative viewpoints (this may be a function of publication bias; Thier & Beach, 2019). When applied to rural special education, this means that the range of evidence-based practices available to rural educators may be insufficient to address the diverse contexts of the students and families they serve.

Although the rural special education literature includes some empirical demonstrations of innovative and effective interventions, programs, and practices initiated within rural communities, such demonstrations remain limited, and rural settings continue to be frequently characterized through a deficit lens (Crumb et al., 2023). That is, much of the existing information about special education approaches in rural schools assumes that rural schools are places of deficit that require the reapplication of innovative approaches tested in suburban or urban schools and adapted in ways that address rural deficits. A focus instead on the "pockets of rural innovation" that are described in the rural special education literature may serve to support rural schools as places that generate novel and socially significant approaches to problems that have been identified in the broader special education literature. Further, promoting rural schools as generative of innovative special education interventions, programs, and practices could help to support problems that have been identified in the broader special education field, including preparation of special educators and related services providers.

1.1. Rural Schools as Models for Innovation

Rural schools are well-positioned to innovate. Rural school personnel can and do design and implement special education initiatives, interventions, and personnel training models to support the local issues and needs that they work with every day. Through collaboration with rural school personnel, some university training models are preparing special educators and related services providers in innovative ways to meet local, rural workforce needs.

Despite being well-positioned to innovate in ways that hold social significance for their local communities, rural schools are often positioned as "recipients" of innovation in publications directed at educational researchers and practitioners (Yang, 2026). This may be because rural settings are often approached from a perspective that draws deficient comparisons to the resources, structures, and other characteristics of suburban and urban schools (Crumb et al., 2023). The existing literature that describes special education and disability services in rural communities often details the limitations and challenges that common

characteristics of rurality can bring to service provision and school provider preparation (American Council on Rural Special Education, 2025). For example, authors have described some characteristics of rural settings as inconducive to intervention effectiveness, such as longer distances from research universities (Dewhirst et al., 2025), small sample sizes (Hott et al., 2025), and lack of established partnerships with area universities (American Council on Rural Special Education, 2025).

Although a deficit perspective is apparent in the rural special education literature, the existing literature also includes demonstrations of innovative educational initiatives and interventions in rural schools ("pockets of innovation"). Research and reporting methods that encourage the participation of rural school community members may especially support the representation of innovative community-initiated interventions and programs (Hott et al., 2025; Jameson et al., 2025; Ryan et al., 2025; Seelig & McCabe, 2021).

Additionally, while unique challenges may be posed by the characteristics of typical rural PK-12 education systems (just as challenges can be posed by the characteristics of any educational system), the literature also shows that effective and innovative educational interventions and personnel training formats are feasible in rural schools (Sindelar et al., 2018). Shifting from a perspective that positions rural schools as innovation recipients to positioning rural schools as strengths-based models for innovative development may help to support field-wide approaches to difficult problems, including special educator preparation (American Council on Rural Special Education, 2025; National Rural Education Association, 2022). This will likely necessitate the field to consider the implications of the question "How can we fit known interventions and programs into a deficient setting?" and to more urgently ask, "What can the rest of the field learn from rural schools?"

1.2. Rural Schools as Strengths-Based Asset Models

Common strengths of rural communities and schools can be leveraged to enhance instruction and intervention. To provide a conceptual grounding for this asset-based orientation, we drew upon the Rural Cultural Wealth (RCW) framework (Crumb et al., 2023). RCW conceptualizes rural communities not as deficit-laden, isolated spaces, but as vibrant ecosystems characterized by four core constructs (Crumb et al., 2023; Schutz et al., 2026). First, rural resourcefulness, or the capacity of rural community members to mitigate resource limitations. Second, rural ingenuity addresses the collective ability of rural individuals to develop innovative practices from everyday knowledge. Third, rural familism highlights the intergenerational networks and connections between kin and non-kin care that provide ongoing mutual support. Fourth, rural community unity is the unifying and organizing behaviors that foster collaboration and support, particularly during times of need. When applied to the professional development of special educators, an RCW lens shifts the focus from adapting standard models to fit rural settings to an approach that explores how embedded rural assets could be mobilized to cultivate, sustain, and retain high-quality special educators (Crumb et al., 2023).

Throughout this article, we conceptualize 'cost-effective' and 'high-yield' practices through an efficiency and impact lens. Although we did not complete formal cost benefit analyses, we employed strategies that met our definitions of these terms. Low-cost or cost-efficient practices refer to models that minimize major recurrent rural expenditures, specifically personnel travel across vast geographical distances, by utilizing existing local school facilities and resources, freely accessible virtual platforms (e.g., Zoom, Google Classroom), and low-overhead physical materials (e.g., shared books). 'High-yield' encompasses outcomes that directly advance rural special education capacity (e.g., increases in teacher self-efficacy, procedural mastery of novel interventions, self-reported retention intentions).

Focusing on the characteristics of rural schools that support innovation and rapid uptake of improvement initiatives may support special educator training. These efforts could support scaling and generalizing successes to issues that occur in larger and more complex educational systems. Rather than serving as examples that successes can occur in places of limitation, rural schools can serve as powerful models for innovative special educator and related services provider preparation and training programs. Shifting from the conceptualization that rural school settings indicate deficiencies to overcome to the conceptualization that rural schools represent strengths-based asset models may better support the investigation and dissemination of generalizable practices for training special educators and related services providers.

University collaborations with rural schools are powerful catalysts for educational innovation because they acknowledge creative, context-responsive solutions to persistent challenges. Rather than viewing rural settings through a deficit lens, researchers increasingly recognize rural communities as environments where strong relationships, local expertise, and collaborative partnerships foster meaningful advances in practice (Grant et al., 2025). Rural programs often drive innovation by developing and testing interventions that are feasible, sustainable, and responsive to geographic dispersion, limited resources, and diverse student populations. These innovations include professional learning, coaching models, interdisciplinary service delivery, and community-engaged partnerships that not only enhance outcomes for rural students but also generate scalable practices that can inform the broader educational community. By positioning rural schools as sites of discovery rather than limitation, research conducted in these contexts expands the evidence base, strengthens educational equity, and demonstrates how locally developed solutions can influence policy and practice on a broader scale.

To demonstrate how university–school partnerships can activate rural cultural wealth, we examine three illustrative case initiatives across North Dakota, Oklahoma, and Nevada. These initiatives were purposively selected as complementary exemplars, as they span the career continuum of educators-initial preservice recruitment and credentialing via place-based 'grow-your-own' residencies (North Dakota); early-career support, retention, and community building (Oklahoma); and targeted in-service clinical competency development (Nevada). Additionally, exemplars represent distinct rural cultural contexts, ranging from remote communities in the northern plains, to geographically dispersed districts in the south-central US, and desert regions in the west. Rather than serving as experimental studies, these cases provide multi-regional, practice-based examples of how rural community assets can be mobilized to address systemic special educator needs (Schutz et al., 2026). We acknowledge that the evidentiary basis across these three programs varies, reflecting their distinct developmental and evaluation stages. These initiatives are presented not as directly comparable evaluations of intervention efficacy, but as complementary, illustrative exemplars that show how rural cultural wealth can be leveraged across different organizational and geographic contexts (Schutz et al., 2026).

1.2.1. The Special Education Resident Teacher Program at the University of North Dakota (UND)

The 2025 *Why Rural Matters* report (Showalter et al., 2025; supported and published by the NREA) indicates that 67.3% of North Dakota schools are rural and 86.9% of the state's rural districts are classified as "small" rural districts. Further, 73.8% of North Dakota's rural students attend schools in remote districts. Major industries, including agriculture and energy production, are geographically tied to rural and remote areas of the state and depend on communities capable of supporting workers and their families (National Association of State Departments of Agriculture, 2022; North Dakota Department of Commerce, n.d.).

Approximately 5% of North Dakota's population is Indigenous, with 60% of the state's Indigenous population living on reservations (State of North Dakota, 2020), emphasizing the importance of preparing educators to work effectively within distinct cultural and educational rural contexts. Within these rural and tribal communities, access to well-prepared educators is a crucial part of the social infrastructure needed to sustain families and local workforces. Despite the importance of a strong educator workforce, North Dakota faces a statewide shortage that is especially pronounced among special educators in rural and tribal areas (North Dakota Education Standards and Practices Board, 2026).

In partnership with the North Dakota Department of Public Instruction (NDDPI) and school districts across the state, UND supports the Special Education Resident Teacher Program ("RT Program") through coordinated funding, recruitment, and training efforts (University of North Dakota, 2026). The RT Program is a special educator training program that uses a grow-your-own (GYO) residency framework in which students are embedded in their community school districts as they complete coursework-based training from UND, receive layered mentorship from the university and local mentors, and participate in internship experiences built on collaboration between UND faculty and experienced community-based educators. Applicants are recruited to the program through ongoing partnerships between the university and school districts across North Dakota, with particular attention to identifying and preparing educators who are likely to remain in the state's rural schools. University personnel regularly connect with rural school administrators and other educational partners to identify prospective applicants and communicate available pathways into the program, including an online accelerated undergraduate-to-master's pathway that serves as an additional recruitment pipeline. The RT Program allows rural community members, who are often paraprofessionals, career-changers, or established educators needing additional training or credentialing in special education, to contribute to special education workforce needs in their local communities in an ongoing way.

Under North Dakota educator licensure pathways, individuals holding an existing educator license (including an alternate access or substitute teacher license) may work in special education classrooms while concurrently receiving mentorship. The RT Program leverages this provision: Students participate in paid mentored teaching experiences in special education classrooms while receiving support and training from UND and formalized support from experienced local special educators. The NDDPI supports the program through federal IDEA Part B funds, which offset participating students' tuition and fees and support their paid field-based experiences. Participating school districts also provide financial support for the program.

GYO educator preparation programs are recognized as training pathways that support culturally responsive and place-based pedagogies that center community perspectives and priorities within educator training (Gist, 2021). Within an RCW lens, the RT Program operates not only as an alternative district staffing pipeline, but as a direct operationalization of rural familism and rural community unity (Crumb et al., 2023). These programs may be especially valuable for rural and tribal communities experiencing persistent educator shortages because they can prepare educators who are rooted in and responsive to the communities they serve, increasing the likelihood that participants complete their preparation and remain in teaching positions over time (Lohmann et al., 2019). Rather than viewing prospective rural and tribal educators through a deficit lens of missing credentials, the program positions their embedded relational roots, generational community ties, and local connections as foundational social and familial assets (Crumb et al., 2023; Schutz et al., 2026). This place-embedded model prepares educators who are already grounded in the cultural contexts of the rural and tribal communities where they live, work, and play (Lohmann et al., 2019). Additionally, the online modality of the courses and internship

experiences provided through UND's RT Program further reduce the need for people in rural and tribal areas to leave their communities to receive required education and training to provide services in high-need areas like special education.

Since its inception in 1997, the RT Program at UND has graduated 20–25 trainees each year for a total-to-date of over 600 trained educators. Program stakeholders report high rates of participant completion and retention, with information shared by NDDPI indicating relatively strong workplace retention among RT Program graduates and internal program information suggesting that nearly all residents complete the program. Faculty associated with the program also identify an ongoing and sustainable special educator recruitment pipeline and strong alignment between coursework and actual classroom practice as important program successes. These observations are consistent with broader findings regarding the potential of GYO and residency-based models to support educator preparation and retention (Gist, 2021; Lohmann et al., 2019).

In addition to tangible program successes, UND's RT Program faculty also report several lessons that they have learned through implementation of the program over the years. For example, program faculty have identified the importance of establishing structured expectations for community mentors and providing additional supports for residents working in higher-needs contexts. Faculty experience with the program has also highlighted the importance of building systematic data collection and evaluation into program implementation, both to demonstrate impact and to provide evidence needed to support ongoing funding and long-term sustainability.

1.2.2. Project CREATE at the University of Oklahoma

Oklahoma presents a compelling context for examining the intersection of rurality, education, health, and workforce development. The state is predominantly rural with over 60% of school districts considered rural (Showalter et al., 2025) and there are a substantial number of small and geographically dispersed communities that create environments where rural schools serve as a vehicle for educational opportunity and community vitality. At the same time, Oklahoma faces significant challenges in education and health outcomes. Oklahoma currently ranks 48th in education and 44th in child well-being in the US (The Annie E. Casey Foundation, 2026). Approximately 27% of students attending Oklahoma schools scored in the proficient range for reading, mathematics, and science (Oklahoma State Department of Education, 2025). These rankings underscore the need for sustained evidence-informed investment in the systems that shape children's educational experiences, health, and long-term opportunities.

About 10% of teachers in Oklahoma have comprehensive training through traditional pathways to teacher licensure (Martinez-Keel, 2026). Despite salary increases and other incentives, over 6000 teachers left the profession in Oklahoma in one year. Of these teachers, 1000 were in their first year (Palmer, 2024). However, rural schools have worked to successfully incorporate GYO programs in partnership with institutes for higher education (IHEs). These programs capitalize on the strong community relationships within rural schools, which provide a foundation for developing contextually responsive approaches to improving student outcomes. Further, these investments in rural education have the potential to generate benefits that extend beyond academic achievement by strengthening community capacity, supporting family well-being, and contributing to the development of a more skilled and resilient workforce.

Project CREATE (Collaboration with Rural Educators to Enhance Advocacy, Training, and Engagement) is a professional development initiative designed to address special educator shortages in rural school districts in Oklahoma. CREATE is a collaboration between the University of Oklahoma and rural school districts and is funded through the

Oklahoma State Regents for Higher Education's Oklahoma Teacher Connection initiative. The program focuses on retaining current special educators and recruiting rural educators into graduate special education programs across Oklahoma. The CREATE team, including university faculty and doctoral students, implemented a three-pronged approach to support special educators in their practice and provide resources for educators seeking graduate training in special education. The three components included professional development, increased access to high-quality evidence-based resources, and development of a community of practice.

All evaluation activities were reviewed and approved by the University of Oklahoma Institutional Review Board (IRB, 17298). All participants completed informed consent procedures electronically prior to participation. A total of 109 individuals representing more than 42 school districts across the state applied to participate in CREATE following recruitment through special education social media pages, emails to district partners, and word-of-mouth communication (e.g., a rural superintendent group text). Social media was an important recruitment mechanism, with 55% of applicants reporting that they learned about CREATE through Facebook in the first year of the project. Of the 64 special educators selected to participate in Project CREATE, approximately 44% were alternatively certified, and 42% had been teaching for 3 years or less. The remaining participants were certified, established educators; however, many were relatively new to the field of special education.

The professional development model included two in-person workshops held at the University of Oklahoma that addressed classroom management, Individualized Education Program (IEP) development, and student progress monitoring. These topics were identified by special educators as among the most challenging aspects of their work (Bettini et al., 2024). The first workshop focused on classroom management, student behavior, and IEP goal development, whereas the second focused on student progress monitoring. Two additional synchronous webinars addressed evidence-based strategies for supporting students' literacy, mathematics, and social skills development.

Participant feedback regarding CREATE professional development was overwhelmingly positive, with 100% of respondents (N = 64) indicating that the in-person workshops and webinars were beneficial. Focus groups were conducted to further examine participants' professional development needs. Teachers reported a need for additional resources and materials. One participant stated, "I'm a [special education] teacher, so I don't get anything." Participants also identified limited opportunities and financial resources for accessing professional development as challenges. One participant explained, "I'd like to do boot camp [and my district said] that they won't help me. So, I'm actually paying for it out of my pocket to audit it." Participants also reported limited confidence in developing student goals and progress-monitoring systems. In addition, many CREATE participants described feeling isolated as special educators within their districts because they were the only special educator or one of very few, resulting in limited access to colleagues with expertise in relevant areas. One participant explained, "I have to reach outside of the district or use Facebook ... communities a lot."

Four synchronous webinars were conducted across two school years and addressed student goal development, Tier 2 behavior supports, student progress monitoring, and community-of-practice development. Participants reported that the webinars were relevant to their needs and beneficial to their learning, with 100% of respondents (N = 64) rating the webinar activities as above average in quality. Participants also reported significant gains in knowledge because of CREATE activities. For example, one participant stated, "I think I have learned the appropriate way of data tracking, and because ... you need different types of data collection for different types of situations and behaviors." Another participant described continued use of CREATE resources to support IEP goal development: "I will

continue to go back and ... get all the information that I need and ... rewrite some goals." Participant activity submissions were consistent with focus group findings. Knowledge, Want-to-Know, and Learned (KWL) activities indicated increased understanding of the process for developing individualized goals and progress-monitoring procedures aligned with individual student goals.

Before participating in CREATE, many teachers reported having inadequate resources (n = 31; 44%) or uncertainty regarding the adequacy of resources available to support student needs in their districts (n = 16; 23%). Beginning in October of each year, participants received access to an interactive Google Classroom that included professional development materials, such as workshop and webinar recordings, references, and additional resources. While the Google Classroom was initially created to house resources and facilitate communication between the CREATE team and participants, it quickly evolved into a tool to establish a community amongst CREATE cohorts.

Nine interactive newsletters were distributed to participants each month during the academic year. Interactive newsletters addressed topics such as evidence-based classroom management, establishing student goals, and progress-monitoring procedures. Each newsletter was viewed an average of 38 times (range = 10 to 91 views), with an average engagement time of 19 min per view (range = 9 to 70 min). Participants primarily accessed the interactive newsletters using desktop computers (54%), and an average of 10 resource links were accessed per edition (range = 2 to 32). Participants reported high levels of acceptance of the interactive newsletter content. One participant noted, "I think the newsletters are really awesome because you guys, you look at some of the stuff that we've [asked for] and you'll put it in the newsletter."

All CREATE participants received two books of their choice, which were mailed directly to their homes, along with recruitment materials for special education graduate programs at institutions of higher education (IHEs) in Oklahoma. Books addressed areas identified as relevant to participants' professional needs and aligned with newsletter and webinar content, including data collection, succeeding as a new special education teacher, and classroom management. A total of 128 books were mailed during the project, along with more than 1500 recruitment flyers. During focus groups, teachers reported that the books supported improvements in their practice throughout the year. One participant stated, "I loved the books! They were so helpful and I referred back to mine throughout the year."

During initial focus groups, participants reported limited opportunities for meaningful collaboration with other special educators. Multiple participants described having few, if any, opportunities to connect with others in the field. One participant explained, "We have had a meeting before school started ... and that was it. We didn't meet again as a team at all." Participants commonly identified social media and friends as sources of professional collaboration and assistance. For example, one participant stated, "I bounce [ideas] off of people like in public forums [and] I'll watch a lot of the Facebook groups." These findings underscore the importance of creating structured opportunities for collaboration and community building among rural special educators.

The Google Classroom provided participants with opportunities to interact and collaborate outside of scheduled CREATE events. Participants expressed a desire to share contact information, and a Google Doc was created to facilitate communication beyond the formal program activities. CREATE participants will remain enrolled in the Google Classroom and have expressed an intention to continue collaborating with their peers and disseminating the knowledge gained through the program within their respective districts. One participant described plans to "talk to ... other participants and just kind of see what ... PDs have been helpful, or if they've led a PD, maybe sending their slides to that person so then they can take that into their district and present it." Another participant expressed

interest in continuing to participate in CREATE: "I would like to continue to be an active member of CREATE. If there are any [additional] opportunities, please let me know."

CREATE participants completed the Teacher Sense of Self-Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001; Ronfeldt & Truwit, 2023) and the Teacher Subjective Well-being Questionnaire (TSWQ; Renshaw et al., 2015) in October and May. Pre- and post-test results were matched for all 64 participants. A paired-samples *t*-test was completed to examine changes in teacher self-efficacy and perceptions of well-being. Results indicated that teacher self-efficacy scores increased from pretest ($M = 6.5$, $SD = 0.56$) to posttest ($M = 7.43$, $SD = 0.53$). Although teacher self-efficacy demonstrated statistically significant increases ($p = 0.022$) and a large effect size (Cohen's $d = 0.95$), changes in teacher subjective well-being were not statistically significant ([$M = 2.91$, $SD = 0.70$] to posttest [$M = 3.11$, $SD = 0.55$]; $p = 0.229$, Cohen's $d = 0.43$). This suggests that while structured professional support bolsters teachers' instructional confidence, broader claims about workplace well-being may require more sustained or additional intervention.

CREATE participants completed a final survey regarding their future plans and employment intentions. Most respondents reported that they intended to remain in their current positions ($n = 55$, 86%), and 47% ($n = 30$) reported that they were enrolled in or intended to pursue a graduate degree at a variety of Oklahoma universities. A review of district websites confirmed that all participants are teaching in rural schools. Two of the 64 teachers are teaching in rural schools in a bordering state indicating that 97% ($n = 62$) are currently serving as teachers in Oklahoma's rural schools. Participants reported that CREATE support and project staff were instrumental in their decisions to pursue graduate education. One participant contacted the project team to describe how participation in CREATE contributed to their acceptance into a graduate program for the 2025–2026 academic year, stating, "Being a part of CREATE has helped me become a better teacher and has made [me] enjoy my work." By supporting the retention of 64 special educators, CREATE is estimated to have saved Oklahoma rural schools more than $759,000 in costs associated with recruiting, training, and supporting individuals to replace established teachers (Learning Policy Institute, 2024). In addition, an estimated 20,000 students across Oklahoma had teachers who participated in professional development in areas addressed by CREATE. Additionally, program components such as book and interactive newsletter distribution specifically aligned with the RCW core concepts of rural resourcefulness and rural community unity (Crumb et al., 2023; Schutz et al., 2026). By sending targeted professional texts directly to participants' homes and curating monthly interactive newsletters, CREATE mitigated material resource limitations. Concurrently, transitioning the Google Classroom from a static repository to an interactive hub for participants from vastly varied locations established a statewide virtual network where educators could share resources across district boundaries. This collective organizing behavior is indicative of rural community unity, demonstrating how technology can bridge geographic dispersion to allow individual teachers to collaborate and form cohesive professional communities.

1.3. Special Education Program at the University of Nevada, Reno

Nevada is a western state that is geographically very large and the seventh largest state by area (The World Data, 2025). It has two main urbanized areas, Clark County and Washoe County, with approximately 89% of the state's population residing in those two counties (The World Data, 2025). The majority of the state consists of rural and remote communities, defined as areas outside urban areas that are more than 25 miles from the urban area with a population of 50,000 and more than 10 miles from an urban area with less than 50,000 people (Geverdt, 2019). The geographic distance of many pre- and in-service teachers from urban centers and universities prohibits the delivery of high-quality skill-based training to the

large number of educational professionals working in rural areas throughout the state on a consistent basis due to travel restrictions and restraints. The need for cost-effective methods for teacher education in evidence-based practices is critical to improving and maintaining teacher practice. Rethinking and developing innovative professional development delivery has been essential to preparing special education personnel.

Preparing special educators to work with students with low-incidence disabilities requires teaching a specialized skill set, including response prompting strategies used for skill acquisition within systematic instruction. Systematic instruction with response prompting is an evidence-based practice for individuals with intellectual disability (Browder et al., 2014). Systematic response prompting includes a variety of strategies (e.g., verbal prompts, gestural prompts, model prompts, varying degrees of physical prompts) to deliver information to a learner about how to respond to increase the likelihood of correct responding, as well as plans for fading or removing the assistance to transfer stimulus control to the natural cues in the environment (Demchak, 1990). Essentially, by guiding the learner in a predictable and replicable manner, instruction is more efficient. Preservice special education teachers and educational professionals learn to implement prompting procedures through practice and feedback, often with an instructor using behavioral skills training to teach the skills to mastery (Sarokoff & Sturmey, 2013; Sawyer et al., 2017). This practice is often completed in in-person university classes.

The extensive size of the state of Nevada and the large number of individuals living in rural communities mean that many potential educators do not have access to in-person classes at universities due to distance. Many programs, including those in Nevada, have adapted to diverse needs with an increase in the availability of on-line classes. Offering online courses has expanded access to pre-service teachers and graduate students in rural locales but has also required innovation in how skills such as response prompting procedures are taught. Using Nevada as an example, in an instructional methods course, we developed procedures for remote behavioral skills training for skill-based competencies in response to the shift to online classes. This allows for opportunities for practice and feedback despite geographic distance. To deliver behavioral skills training, response prompting procedures are described through a combination of synchronous online lectures and textbook and article readings with succinct written descriptions of procedures provided as component checklists and flowcharts. Modeling of the procedures is done via video models paired with written instructional plans matching the modeled instruction. Preservice teachers and graduate students then practice the procedures through a series of activities or practice points in which they are expected to implement an increasing number of steps. First, they watch the instructor video model of the procedure and measure procedural integrity using a checklist. They document whether the instructor in the video implemented the procedure correctly and as specified in the written plan for each procedural component. Then, they implement the procedure with an adult confederate role playing as a student by following the written plan and video recording their own performance. Videos are shared with instructors. Both the preservice teachers and the instructor evaluate performance using the procedural fidelity checklist. Finally, they develop their own plans and implement those plans with actual students with disabilities, again video recording their performance and sharing with the instructor.

Graduate students or others working in school settings may already have access to students with whom they can work, while other preservice teachers may be paired with a teacher in a local school. Performance feedback is delivered by the instructor for each of these activities according to the procedural integrity checklist (i.e., reinforcement delivered contingent on congruence of performance with appropriately written plan components, error correction delivered contingent on incorrectly written or implemented procedure

components), ensuring that each student practices and receives feedback at least three times or until the student demonstrates competency. Written feedback is delivered for each performance, and the instructor and students can review videos together as needed to identify and practice specific performance features. These remote behavioral skills training steps are repeated across each of the response prompting procedures that are taught in the course (i.e., system of least prompts, most-to-least prompting, constant time delay, progressive time delay, graduated guidance, simultaneous prompting).

The adaptation of behavioral skills training was an innovation in teacher education that has led to an increase in competent teachers in rural areas throughout the state. Educators in a number of rural counties have been able to complete licensure programs and demonstrate skill-based competency while living and working in their own communities. Individuals who are already invested in their rural communities have the opportunity for hands-on practice and implementation of evidence-based instructional strategies by participating in virtual coursework for teacher licensure. Following the development and early implementation of the adapted virtual behavioral skills training procedures, course completers were asked about their perceptions of the procedures. Social validity data supported the utility of the procedures in increasing confidence, in addition to competence, across response prompting procedures. By eliminating the need for costly travel by both the instructors and the preservice teachers and graduate students enrolled in the licensure program, social validity for the remote behavioral skills training in specialized practices was further increased.

A similar application of remote behavioral skills training has also been adopted for professional development for in-service teachers in the state of Nevada. A common barrier for professional development in rural areas is access to high-quality training and trainers with expertise in special education topics (Glover et al., 2016) that are more likely to be available in more urban areas, close to universities and other services. This disparity in professional development access is an oft-cited issue (e.g., Randolph et al., 2020; Torelli et al., 2024). As a solution, virtual professional development opportunities have been offered across the state so that equal opportunities for participation are available to in-service special education teachers in remote and rural areas. As there is ample evidence documenting the need for practice and feedback beyond the initial training or knowledge-based sessions in professional development activities (Kretlow & Bartholomew, 2010), behavioral skills training was embedded in the statewide training to increase potential for implementation in applied settings.

An example of these professional development activities with embedded remote behavioral skills training was a series on stimulus preference assessments. Information covered in the series included appropriate use of reinforcement in programming and instruction and identification of preferred stimuli likely to function as reinforcers through paired choice, multiple stimulus, and successive choice stimulus preference assessments. Each of the three assessment procedures were described in synchronous training sessions via Zoom, with written sample data sheets and step-by-step instructions provided to participants in writing. Video models of assessment procedures along with photo examples were shown as models with corresponding data sheets for two of the procedures, while live modeling of procedural components were used for the third assessment. To practice, participants were instructed to gather stimuli to use to role play implementation of the assessment procedures. They were then asked to implement components in view of their web cameras so that they were visible to trainers who were available to deliver feedback. The trainers role-played as students or child participants engaged in stimulus preference assessments and verbally indicated choices of stimuli to in-service teacher participants. Three trainers collaborated to deliver descriptive praise and error correction during the practice and feedback portions of

the training. Due to the group format of the practice sessions, steps were repeated only on participant request or when trainees had questions pertaining to steps.

Teacher participants were asked to complete a brief social validity questionnaire about the professional development series following completion. All participants indicated that they found the information relevant to their work and the activities beneficial. Many provided comments about the benefit of the video models and opportunities to practice procedures step-by-step. There was also a lot of positive feedback about being able to attend virtually and the opportunity it provided, as they would be unable to attend an in-person class. Innovative delivery of content through familiar video platforms has been valuable in adding to the repertoires of teachers in rural areas in Nevada. Information on social validity includes results of routine program evaluation activities and was not considered formal research.

Another low-cost professional development method for in-service special education teacher training in the state of Nevada has been the use of professional book clubs. Special education teachers in rural schools may be the only special education teacher in their school, or even the area or district (Randolph et al., 2020). Further, they may have supervisors and administrators with little or no special education background (Prudente & Demchak, 2025). The implication of this is a lack of access to other professionals with whom to exchange ideas, especially related to serving children with low-incidence disabilities. Problem-solving and planning with other teachers serving similar populations of students is key to building connections at work, feeling supported, and refining evidence-based practices. With limited and infrequent access to professional learning communities, special education teachers in rural locales need alternatives to these collaborative interactions. Online professional book clubs have provided this alternative community (Blanton et al., 2020).

Special education teachers across the state were invited to participate in specialized professional book clubs with a focus on strategies relevant to children with multiple disabilities, including impairments in vision and hearing. Book topics included adapted literacy, communication instruction, tactile strategies, and use of visual schedules and calendars. To date, five separate book clubs have been held. Book clubs were limited to about 18 to 20 participants each to allow for meaningful conversation among participants. Books were mailed to each participant along with reading pacing guides and club meeting dates and activities prior to the first meeting. Costs associated with the book clubs were minimal and limited to the cost of the books. Clubs met regularly over several weeks or months, with each meeting devoted to discussion of a chapter or section of the book. Members read the assigned chapters in advance of the meeting. The professional development providers, university professors, facilitated meetings by preparing questions for reflection and discussion, moderating discussions, and pointing out or explaining concepts or procedures in the texts. Participants also engaged in goal setting (i.e., selecting strategies to try with specific students and timelines) and trial of strategies. Some sessions were reserved for participants to report on their implementation experiences and work through any challenges they had encountered by asking their colleagues questions. The book clubs served as professional learning communities for in-service teachers who lacked the support of teachers serving similar populations in their own rural communities.

This innovation in rural special education teacher in-service training, specifically the deployment of remote BST protocols and book clubs, reflect expressions of RCW core constructs such as rural ingenuity and rural resourcefulness (Crumb et al., 2023; Schutz et al., 2026). While faced with vast geographic distances, program faculty and rural educators enacted rural ingenuity by leveraging everyday video conferencing tools to support candidate mastery of complex procedures within their local classrooms (Gutiérrez et al., 2017; Schutz et al., 2026). This program allowed teachers to access high-quality professional development

in their own communities with the addition of connection and collegial interaction with peers who provided feedback on the implementation of newly learned evidence-based practices. Participants reported that they liked getting a book to build their professional resources and keep as a reference and that the strategies they learned were immediately relevant and actionable for their specific students. Key innovations for rural special education in Nevada have focused on adapting evidence-based professional development strategies typically delivered in person so that procedures can be implemented virtually. Synchronous collaborative interactions occur by connecting educators across distances who share needs and interests in learning to implement evidence-based instructional strategies.

2. Discussion

Collective programs across rural North Dakota, Oklahoma, and Nevada have incorporated strengths-based models to address persistent challenges associated with recruiting, preparing, and retaining special educators in rural communities. Rather than viewing rurality primarily through a deficit lens, program data suggest that rural contexts can provide important opportunities for developing teacher preparation approaches that are responsive to local communities. Although the approaches across these states differ, they share several general principles, including strong connections between preparation programs and local schools, attention to community context, opportunities for mentorship, and efforts to develop educators who understand and are committed to the communities in which they work.

Importantly, rural schools and communities should not be viewed solely as settings in which teacher shortages and limited resources create barriers to effective practice. Instead, rural schools may serve as exemplars of how contextually responsive teacher preparation can strengthen educational systems. The experiences of North Dakota, Oklahoma, and Nevada demonstrate that effective preparation is not necessarily dependent on replicating models developed for urban or suburban settings. Rather, effective rural preparation requires consideration of the geographic, cultural, economic, and educational characteristics of individual communities (Rude & Miller, 2018; Sindelar et al., 2018). Programs that intentionally connect teacher candidates with rural schools, provide sustained opportunities to develop relationships with practicing educators, and prepare candidates to understand the communities they serve may be particularly well positioned to address the needs of rural schools. This distinction is important because rural communities are not homogeneous; therefore, a strengths-based approach should identify shared principles while allowing programs sufficient flexibility to respond to local context.

The three university–school partnerships provide initial evidence that we can practically leverage rural community strengths into tangible supports for special educators (Crumb et al., 2023; Schutz et al., 2026). First, each program builds upon existing community relationships. In North Dakota, established rapport between local veteran teachers and residents creates a natural, layered mentoring structure right in the school building. Similarly, Project CREATE in Oklahoma took teachers' habit of seeking peer advice on social media and helped to turn it into a dedicated, state-wide virtual community of practice where they could share ideas and resources and problem solve issues across isolated districts. Second, these initiatives use place-conscious training that meets educators where they are at. Rather than asking teachers to travel long distances to access learning, programs in Nevada and Oklahoma bring high-quality learning directly into local classrooms. Through remote coaching, video modeling, and virtual book studies, teachers build specialized instructional skills using the materials and resources they work with every day. Finally, these partnerships function through shared investment. The universities contribute coursework pathways, resources, instructional materials, and mentorship, while rural districts provide

the authentic classroom settings, community connections, and local dedication. Together, these practices show how rural communities and universities can collaborate to facilitate lasting practical support for special educators (Crumb et al., 2023; Schutz et al., 2026).

A particularly promising approach is the development of grow-your-own pathways that recruit and prepare individuals from rural communities to become special educators. Individuals who have longstanding relationships with a community may enter teacher preparation with knowledge of local schools, families, cultures, and community strengths that cannot be readily acquired through coursework alone. Preparing local residents to become educators may also contribute to workforce stability by developing a pool of teachers who have personal and professional connections to the communities in which they work. This approach may be especially important as rural communities experience demographic changes associated with urban sprawl. Communities located near growing metropolitan areas may experience rapid population growth while retaining characteristics of rural schooling, creating increasingly complex educational contexts. Thus, rural teacher preparation programs may need to consider not only geographic isolation but also the changing social and demographic characteristics of rural communities.

Access to high-quality mentorship and professional communities of practice represents another important strength emerging from these rural models. Geographic distance can limit access to colleagues, supervisors, and specialized professional development; however, technology provides opportunities to expand professional networks beyond the boundaries of individual schools and communities. Mentorship can occur within schools and communities, across geographically dispersed rural schools, and through professional networks that connect rural educators with university faculty and other specialists. Communities of practice may therefore serve a dual purpose: reducing professional isolation while creating spaces in which educators can collectively consider how evidence-based practices can be adapted appropriately to their local contexts.

Program outcomes across the three states further indicate that sustainable rural teacher recruitment and retention require attention to the infrastructure necessary to support educators. Funding from state education agencies, federal programs, and other sources can create opportunities to develop innovative preparation pathways, provide mentorship, establish university–school partnerships, and expand access to graduate education. These resources may be particularly consequential for rural communities in which the size of the workforce makes it difficult to sustain specialized programs locally. Programs in North Dakota, Oklahoma, and Nevada can serve as models for future work across rural schools. It is important that replication and scaling occur to ensure that rural students, their teachers, and their communities are included in the special education evidence base.

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