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Project SASI: A Community Engagement Project to Increase Recruitment and Retention of Professionals Working With Students With Sensory Impairments in Rural and Remote Schools

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Abstract

Project SASI (Students with Autism and Sensory Impairments) tested the use of community engagement strategies to increase recruitment of professionals working with students with sensory impairments in rural and remote communities to address personnel shortages in these areas. The project was based on the intersection of high-impact strategies for recruitment of teachers in rural regions and a model of engaged scholarship for creating reciprocal learning relationships between faculty and communities. The project incorporated community engagement strategies before and during coursework, as well as a postfunding sustainability plan. Findings suggest overall satisfaction with the project and that professionals prepared with these connections to the community intended to remain in the region for many years. Further research is necessary to understand how individual components of engagement, as well as long-standing relationships between communities and faculty members, contribute to continued recruitment and retention of professionals working with students with sensory impairments.

Keywords: rural scholarship, teacher recruitment, community engagement model, sensory impairments

This article describes how a university personnel preparation program used community engagement to address recruitment and retention in rural and remote regions for sensory impairment professionals, including teachers of students with visual impairments, teachers of students with deafblindness, teachers of students who are deaf or hard of hearing, and orientation and mobility specialists. This project focused on alleviating the shortage of professionals in rural and remote regions who work with students with sensory impairments who are otherwise unable to access appropriate services. Students without access to needed services from certified professionals in the area of sensory impairment are much less likely to meet learning outcomes, graduate from school, continue through college, attain satisfactory employment, or achieve independence as adults.

The purposes of this article are to show how one project used community engagement to solve the problem of the lack of personnel to serve students with sensory impairments in rural areas and to offer that project as a model for others to consider. This article accomplishes that purpose by connecting theoretical work in the field of community engagement, primarily the engaged scholarship model by Franz (2009), with activities in a personnel preparation grant project. The article presents several early forms of empirical evidence: survey results with stakeholders, participants, and employers; data collected on results of grant activities;

and participant voices from community partners, program graduate students, and researchers. These project results support the idea that engagement practices hold strong prospects for increasing the number of personnel to serve students with sensory impairments in rural and remote regions.

Context of the Project

Project SASI: Students with Autism and Sensory Impairments was a program partnering Texas Tech University with six states: Arkansas, Idaho, Mississippi, Montana, Texas, and Wyoming. All of these states have large rural and remote regions where students with sensory impairments do not have access to highly trained and qualified professionals. The U.S. Census defines "rural" as geographic areas that are not urban (i.e., a population of 50,000 or more) or urban clusters (i.e., a population of at least 2.500 and less than 50,000; U.S. Census Bureau, 2018). Idaho, Montana, Texas, and Wyoming are classified as rural states due to their large amounts of land classified as rural. Additionally, the majority of the counties in Arkansas and Mississippi are considered rural by the U.S. Census Bureau. The term "remote" refers to a territory inside an urban cluster that is more than 35 miles from an urbanized area (National Center for Education Statistics, 2006). Additionally, five of the states did not have any university programs that provided training to educators of students with sensory impairments in at least one of the four target areas of the project: teachers of students with visual impairments, teachers of students who are deaf or hard of hearing, teachers of students with deafblindness, and orientation and mobility specialists. Even though Texas has these personnel preparation programs, it had a shortage of teachers in the area of deafblindness. Thus, the Virginia Sowell Center for Research and Education in Sensory Disabilities provided training to graduate students from these six states.

Community engagement entered the discussion by faculty from Texas Tech University and key personnel from the field of education of children with sensory impairments from the above-mentioned states as a sustainable means to recruit educators of students with sensory impairments. Key personnel from some of these rural states had previously been involved in personnel preparation grants with Texas Tech University.

A full theoretical model is developed later in this article, but initial reflections by Texas Tech University faculty and staff on the nature of the problem revealed that training graduate students from these rural and remote regions was likely to be successful for two reasons. First, after achieving improved education, the educators created a learning community of professionals serving children with sensory impairments. Second, future grant projects were written and funded to sustain the need for a continued supply of specially trained personnel to alleviate the lack of qualified professionals to serve children with sensory impairments in these rural and remote areas. To solve this problem, Project SASI integrated rural and remote stakeholders (i.e., state department of education personnel, schools for the blind and/or deaf personnel, university faculty and graduate students, parents of children with sensory impairments) as early in the process as possible. At a grant-development meeting, these stakeholders partnered with faculty at Texas Tech University to propose a community engagement–centered personnel preparation program. Educators who were already working as teachers in other areas from rural and remote regions were recruited, offered distance education to keep them in their local context, participated in a curriculum strongly based in local needs, and connected to professional networks and resources. Subsequently, the educators were employed in these rural and remote regions, where they provided sustainable and qualified services to students with sensory impairments.

Literature Review and Theoretical Framings

Project SASI was intended to increase the number of educators to work with students with sensory impairments in rural and remote settings through community engagement. By connecting graduate students with rural and remote communities, training them with the specific needs of those communities in mind, and building relationships throughout the training period, it was felt that the number of these specialized professionals in rural and remote regions could be greatly increased.

Special education teachers leave rural schools at high rates, but a deciding factor in their retention is the "rootedness to

the community" or "community sphere" (Bornfield et al., 1997, p. 36; Davis, 2002). However, little information has been shared on exactly how to develop this rootedness, and it was felt that community engagement between programs, graduate students, states, and rural communities was the key. If students from local communities in rural areas were recruited and then trained in a very specific area of special education (education of children with sensory disabilities), would this help relieve the personnel shortage? The phrase "rooted in the community" was an ideal match with community engagement strategies for Project SASI.

Engagement Model

This program's engagement strategy can be understood in three parts. In the first, the faculty's engagement was situated in what Ernest Boyer called the scholarship of integration, focusing on "connections across disciplines and the functions of research, teaching, and outreach" (Boyer, 1996; Franz, 2009, p. 32). The graduate students within the project engaged with their communities in a variety of manners that can be understood through Butin's (2003, 2005) "four lenses" approach. Finally, the relationships between all five partners in the model fulfilled Project SASI's sustainability objectives. This section introduces the engagement model and then explains the underlying theory behind the faculty part of engagement, the graduate student part of engagement, and then the sustainability plan.

Project SASI's Engagement Model. Project SASI created an engagement model that represents how the five major participants (faculty, graduate students, rural/remote communities, state collaborative partners, and professional networks) engaged at different times throughout the model. The functional parts of these relationships will be discussed later in the article (Figure 1 depicts the engagement model for Project SASI). In this section, the theoretical grounds for understanding the engagement will be explicitly introduced.

The multipurpose nature of engagement is integral to Project SASI. As in much engaged scholarship, there is both a pedagogical/andragogical opportunity for the graduate students and a reciprocal learning relationship between faculty and rural communities. But beyond both of those factors, Project SASI was also intended to build sustainable relationships that would last beyond the end of each student's program, the larger project, or even their career as faculty. Since rural and remote locations will always have students with sensory impairments, there will always be a need for appropriate instructors. Solving the problem of a shortage of qualified instructors for rural and remote students with sensory impairments means developing sustainable relationships not just with the immediate and current members of the project (faculty, graduate students, and community partners) but also the institutions those people represent (universities, teachers-in-training, and rural and remote communities in the participating states).

Faculty Engagement. It is difficult to find a model from research that speaks to engaging communities in personnel preparation programs, and one goal of this project was providing initial theoretical work in this area. To build a model that explained community engagement in the context of a personnel preparation program, the researchers began by describing the role of faculty engagement according to the "leverage points" that Franz (2009) suggests in the engaged scholarship model. Franz describes six leverage points: (1) discover knowledge, (2) develop knowledge, (3) disseminate knowledge, (4) change learning, (5) change behavior, and (6) change condition (see Figure 2).

Project SASI focused on three of these leverage points as areas of engaged scholarship: change learning, change behavior, and change condition. First, faculty wanted to change learning by integrating local needs and circumstances with professional standards and research-based practices. This change required inventing a pedagogy where graduate students became experts in collaboration and reflection alongside the explicit skills in their fields of study, using strategies like Bergan's collaborative consultation model (Bergan, 1977, 1995). Next, the goal was to change behavior by building a project that integrated community voices from the beginning and past the end of the project. This step meant engaging with communities in several areas that were traditionally the exclusive purview of university faculty. Finally, there was a desire to change conditions for two populations: students with sensory impairments in rural and remote communities and professionals working in those communities. The communities themselves needed sustainable

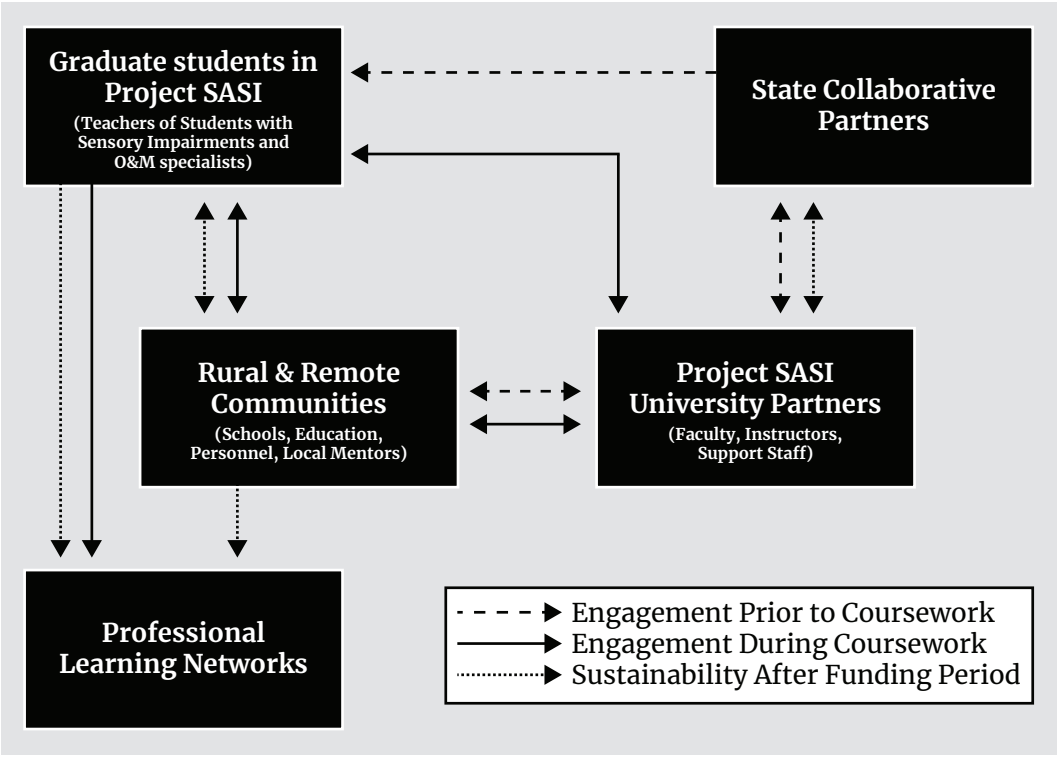

Figure 1. Community Engagement Model for Project SASI
Note. The figure depicts engagement relationships prior to and during coursework, as well as a sustainability plan for after funding. O&M = orientation and mobility.

solutions for their children with sensory impairments. The educators needed to feel integrated into their local communities and to develop rootedness in their professional learning networks with others working with children with sensory impairments (Bornfield et al., 1997; Davis, 2002).

Beyond these three leverage points, great value was found in Franz's definition of engaged scholarship as "focusing on the reciprocal relationship with a community that adds value to the community and the scholar's discipline" (2009, p. 35). For this project, the personnel shortage problem in rural and remote communities cannot be solved by universities alone. Engagement with local personnel was needed to recruit and support teacher candidates for this project. No amount of coursework can respond to the lack of personnel preparation programs that leads to a personnel shortage. Likewise, the rural and remote communities, even though they contain willing personnel, lack the resources and faculty to train educators to meet demands of children with sensory impairments since these children are a low incidence population compared to children of other disability areas. With limited resources, it is not feasible for these rural and remote areas to maintain personnel preparation programs in each of these specialized areas. This reciprocal relationship was the core of Project SASI's mission as well as the driving force behind the creation of the project.

Graduate Student Engagement. The graduate students' learning can be understood through Butin's (2003, 2005) "four lenses" approach. The key to Butin's work is that it allows service-learning to be viewed through a "disentangling of the multiple and usually conflating goals" of the learning opportunity rather than as a "normative or . . . presumed vision of what service learning is/should be" (2005, p. 90). In this case, the graduate students' learning has multiple entangled goals: to become sustainable members of rural and remote communities, to better understand pedagogies for students with sensory impairments, and to engage professional networks that will serve their learning after the completion of the program, to name a few.

The key difference separating graduate students in this project from undergraduates involved in more common types of

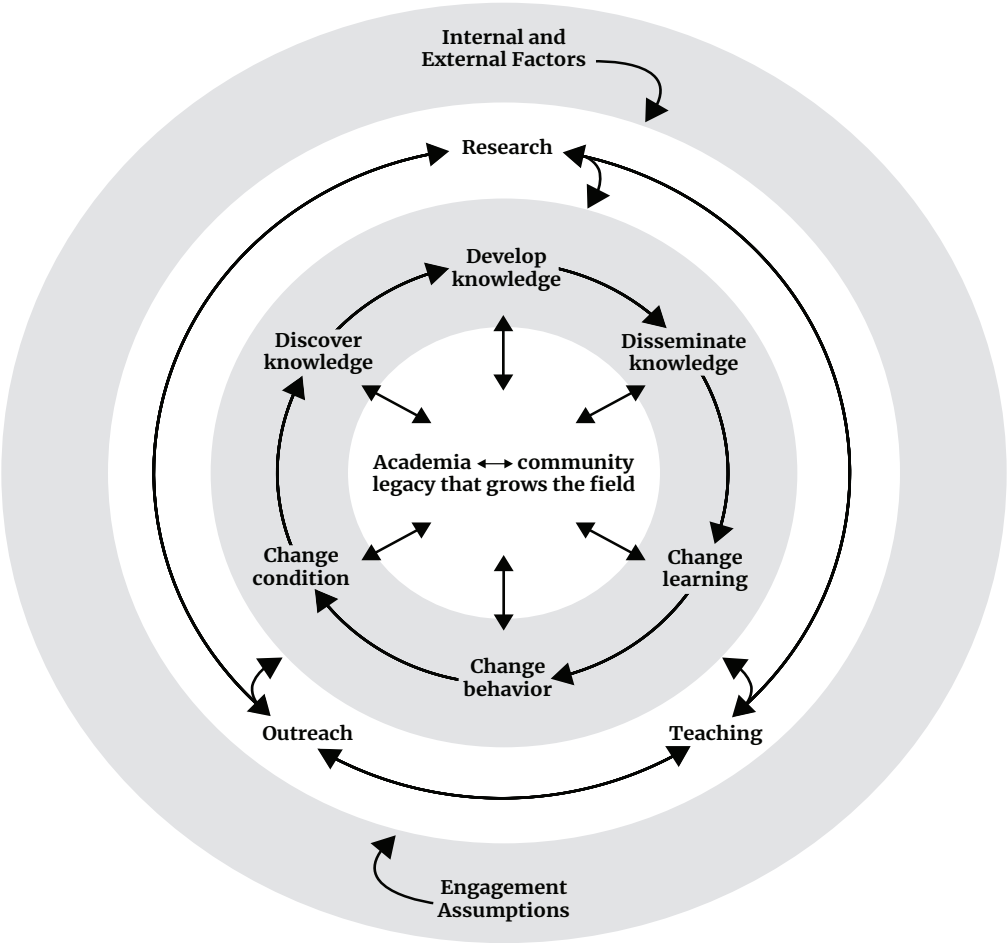

Figure 2: The Engaged Scholarship Model (Franz, 2009)
Note. The interior gray ring describes six leverage points where faculty members and communities can create engaged relationships.

service-learning, and this particular model of an engaged andragogy from more instructor-driven service-learning pedagogies, is that the graduate students are free to make meaning through the lens of their choice. For example, some students engage with rural and remote communities as a way to become better teachers of students from these communities. To Butin, that is the lens of a technical conceptualization of service-learning, and a perfectly acceptable way to approach community engagement activities. Likewise, some students frame their engagement with communities as a way of "lifting up" those communities and helping them accomplish goals, like caring for their citizens with sensory impairments, in ways that were not previously possible. This is what Butin would characterize as a cultural conceptualization of service-learning, and it is just as valid a method as the technical approach.

Sustainability of the Project

A community project of this scale is not feasible for the simple purpose of providing short-term solutions. Project SASI explicitly recognized that the need for rural and remote students with sensory impairments to have trained, highly qualified instructors will be addressed beyond the end of the funding period. That is why the relationships between state partners, communities, and the university are important parts of the engagement model. Similarly, the graduate students in this program will need to address challenges throughout their careers while performing job functions in rural and remote locations. To facilitate

lifelong learning as well as serve students with the best possible knowledge, it was important that graduate students remain engaged after the end of their coursework. This engagement is also meant to combat attrition of trained professionals from rural and remote locations by providing them with ways to meet their professional development and peer relationship needs.

Description of the Project

This article discusses three ways Project SASI engaged communities in rural and remote regions. First, we discuss how Project SASI worked with community partners to form a strategy that became the basis for a federally funded grant. Then, we explain how the graduate students and communities connected with each other during the students' coursework and supplemental activities. Finally, we offer a discussion of how the sustainability strategy after the conclusion of grant funding focused on continued engagement between all members of the project, as well as relevant professional networks for the newly trained educators and communities being provided.

Project SASI can best be described according to the framework above, where the relationships before, during, and after coursework provided meaningful engagement between graduate students, communities, and the university. In this section, we provide a description of how the university and community partners met and engaged prior to coursework; how coursework during the project encouraged community engagement between the graduates, children with sensory impairments, and communities; and how plans for the postfunding period created sustainable connections between the university and community partners.

Engagement Prior to Coursework

Prior to the beginning of coursework for the first cohort of Project SASI students, several community engagement strategies helped shape the program. Since the core aspect of the recruitment strategy was to connect the graduate students to the regions they served throughout the program, it was considered advantageous to involve community partners from each potential participating state (e.g., state department of education personnel, state schools for the blind and/or deaf personnel, parent of a child with a sensory disability) directly in the grant-writing process from the beginning. Community partners (who later became identified as collaborative partners or CPs) were identified from each of the six collaborating states and were invited to participate in a grant development weekend. A Growing Graduate Programs internal initiative by the Texas Tech University Graduate School awarded to the academic partners included sponsorship of a 3-day collaborative retreat with the community partners from the six states, three university faculty, and one research assistant in winter 2011 to discuss the project initiatives, work on the grant objectives, and provide insight into the needs of each state. This funding allowed the project to fly in all of the community partners to the retreat, where the skeleton of the project was fleshed out for the first time. More importantly, this collaborative activity was the beginning of the consistent engagement that continued throughout the project.

Prior to the weekend retreat, supporting data was collected through needs assessments with all participating state community partners. Each state's needs were unique to its own particular demographics and geography. Data was collected on (1) current personnel preparation programs offered in each state, (2) current personnel in each sensory impairment area in each state, (3) numbers of students in each sensory impairment category served by each state, (4) expected personnel needs for students with sensory impairments in the next 3 years, and (5) expected personnel needs for those students who also have autism in the next 3 years.

The grant-writing retreat consisted of large-group and small-group activities between the academic partners and the community state partners. There was joint effort to establish each state's needs and then to involve the community state partners in the development of drafts of the different grant sections. The community state partners' input was included in the final grant proposal submission, particularly in the area of needs assessment. Their input was also included in grant sections addressing how they would assist with recruitment of graduate students (teachers), how to develop mentoring programs within each state, and how to evaluate the effects of training the graduate students on the outcomes for children with sensory impairments that they teach. The community state partners also contributed to discussions

about resources and budget.

The resultant framework included a grant where the community state partners that were designated as collaborative partners (CPs) in each state identified and recruited applicants through their state networks and target areas in the state where the needs were highest for these specialized personnel so that graduate students would be hired and remain in their local areas upon completion of their program. Then, local mentors (teachers of students with visual impairment, teachers of students with deafblindness, teachers of students who are deaf or hard of hearing, orientation and mobility specialists) were identified to support graduate students in their internship and at least 1 year beyond the end of their program, to ensure ongoing connection to their local community. Knowing that there was support from the local or nearby community was an important way to keep the graduate students engaged after completion of the program as they started their new careers.

Project SASI had four stated objectives:

1. Identify, recruit, and train professionals from rural, remote, and high-need locations to increase the capacity to serve students with sensory impairments.
2. Provide specialized training in effective strategies for working with students with sensory impairments and autism spectrum disorder.
3. Provide a high-quality personnel preparation program to selected scholars via a hybrid program that utilizes distance education, face-to-face instruction, and local support.
4. Establish and maintain ongoing collaboration between Texas Tech University and each participating state to meet the current and future personnel needs for students with sensory impairments and autism.

As soon as the university partners received notice of grant funding, the state CPs were notified of the grant award and began the graduate student recruitment process in their respective states. In turn, CPs connected to state departments of education began their own distribution of information about the project. Recruitment letters, information about Project SASI, and applications were distributed throughout their state networks, and Project SASI soon received 58 applications for the two cohorts. The project directors who are faculty members at Texas Tech University independently evaluated the applications using a rubric they developed (see Figure 3) and then discussed those evaluations with each state's CP to select a final first cohort of 20 graduate students and a second cohort of 23 graduate students that would be best equipped to meet the needs of students with sensory impairments in rural and remote areas.

Community Engagement During Coursework

Project SASI graduate students engaged with rural and remote communities primarily during coursework. Since many of these graduate students already held ties to the region of need, they were familiar with much of the tacit knowledge required to live and thrive in that region. This familiarity allowed a focus on connecting them to resources specific to their field of study and the idea of working as a professional in that field while remaining rooted to the community. Most of them were also already expert teachers in some discipline, so coursework built on their prior pedagogical training. This platform allowed considerable portions of coursework to focus on building collaboration skills and connections. Beyond the graduate students themselves, ongoing engagement efforts took place between states, communities, and university partners. On multiple occasions this group was able to collectively address problems with the project or specific students in unique ways, and one of them will be detailed in the section below. A subcommittee of the Project Advisory Board rated the course syllabi in all four programs as evidence based at 100% using a rubric designed by the university faculty members.

Graduate Student/Community Engagement. Programs at Texas Tech University's College of Education feature trademark outcomes. A trademark outcome is a focus of the program that distinguishes its graduates from those of other programs. The trademark outcome for all graduate students in Project SASI programs was assessment of assistive technology for children with sensory disabilities and then the development and implementation of an instructional program in its use through collaborative consultation. The pedagogical steps to achieve this outcome required Project SASI graduate students to interact with their communities

SASI Application Rating Rubric
Name of applicant _____
City & state _____
Program _____
Collaborative Partner rating _____

Meets general education "highly qualified" status		Yes	No	
Complete application		Yes	No	
Letter of reference rating	Based on:	1	2	3
Letter of reference rating	Based on:	1	2	3
Letter of reference rating	Based on:	1	2	3
Essay rating	Based on:	1	2	3
Vita rating	Based on:	1	2	3
Overall rating	Based on:	Highly recommend	Recommend	Don't recommend

Figure 3: Project SASI Application Rating Rubric

through three phases of coursework. All of the four Project SASI personnel preparation programs used the model of a trademark outcome and three phases. This model was developed by the College of Education's dean and faculty members.

To illustrate this model, an example is given using the three phases of the Orientation and Mobility Program, one of the four sensory impairment programs included in Project SASI, that build toward the trademark outcome. In Phase 1, students used Bergan's (1977, 1995) collaborative consultation model to develop an in-service training. At this point in coursework, Bergan's model was studied as a foundational way to integrate knowledge from other sources; in essence, to build a learning network. The in-service training module assignment began to acclimate participants to a role they were very likely to play in rural and remote communities: teacher and trainer of other teachers for issues surrounding sensory impairments.

Phase 2 of the program built upon the basic knowledge of collaboration and asked graduate students to begin to relate that to assistive technology decisions. Many indi-

vidual assignments focused around both of these ideas, but the important, final product of this phase was a completed University of Kentucky assistive technology evaluation. This process required graduate students to connect to local resources, schedule and plan a meeting of a team of professionals working with a child with a sensory impairment, conduct a needs assessment regarding the technology needs of this child, and then implement an assistive technology plan based on a recommendation of the team of professionals who worked with this student with a sensory impairment.

The final phase of the program occurred while graduate students were involved in their internships. Texas Tech University partnered with Granite State College to utilize their reflective analysis of student work (RASW) process. This process provided a structured way for orientation and mobility graduate students to reflect on how their lessons impacted student outcomes. The graduate students in the program used the process to assess and implement assistive technology interventions for a child with visual impairment. One important component of the RASW process was engaging with other professional resources. Project SASI graduate students were expected to take this collaboration to the next level and engage with others (e.g., other orientation and mobility specialists, general and special education teachers, teachers of students with visual impairments, therapists) in their professional learning communities to find solutions that improved student outcomes.

In addition to the assignments situated in the three phases, each program had multiple other areas where graduate students were simply asked to connect with their local community. For example, one course in the Deaf and Hard of Hearing program asked graduate students to read and sign a book to a group of local students at a local bookstore or library. These experiences were usually accompanied by a reflection assignment, often posted to a discussion board that other graduate students in the courses could view. Thus, if the SASI graduate students encountered challenges or noticed a particularly excellent result during one of these outreach activities, they could share that experience with their fellow graduate students and receive thoughts or input. Other ways this peer network was built are described in the Sustainability Strategies section.

University/Community Engagement. During coursework, there were two primary methods of communication between communities, university partners, and CPs. The first was a recurring meeting primarily between the university partners and CPs. The second was the use of a mentor program, which is a recommended research-based strategy for teacher retention (Billingsley et al., 2009; Boe et al., 2008; Pogrund & Cowan, 2013). Communication with the mentors was sometimes challenging (lack of timely response from mentors, stress of having a mentor, etc.), but communication at the recurring meetings provided important opportunities to intervene in unique ways for graduate students and their students with sensory impairments.

Recurring Partners Meeting. The partners' meetings brought together CPs and university partners to discuss ongoing concerns and successes. A significant part of the meetings was brainstorming sessions, where state partners focused on a particular problem and how it might be resolved in line with that state's own rules and regulations. In several cases, the states were able to help each other in ways that the university partners could not. For example, a graduate student from one state was denied a position because that state did not have the state exams required for certification in the graduate student's area of study. The CPs were able to discuss this situation, and another state offered to allow the student to sit for a state examination in its state and then negotiate a reciprocity arrangement. This agreement led to the state in question now having a permanent solution to certification, as well as a solution for this particular graduate student.

Mentor Program. The mentor program was one area of Project SASI that showed several mixed results. Mentors were local experienced teachers of students with visual impairments, teachers of students with deafblindness, orientation and mobility specialists, teachers of students who are deaf or hard of hearing, and, in some cases, the CPs. The use of mentors is well supported in the literature as a way to improve teacher retention (Smith & Ingersoll, 2004) and to build a professional learning network. Thus, it was theoretically sound to include a mentor component in the project. Furthermore, it was hoped that local mentors would be able to provide tacit knowledge about working in a region to supple-

ment graduate students' own knowledge. In most cases, this support was precisely what happened, and the mentor program was a huge success. In other cases, however, mentors were unable to stay with graduate students for long enough to develop a significant relationship. In some of these cases, the mentor relationship created stress for the graduate students and CPs and caused difficulties for the program, usually related to lack of responsiveness on the part of one of the partners in the mentor relationship.

The mentors in Project SASI completed an online training module and participated in a webinar and a teleconference led by mentor-training experts. The mentors were provided a mentoring framework and the opportunity to ask questions at the training experiences. Many of the mentors were directly recruited from high-need regions, and several state-level CPs also participated as mentors. Efforts were made, where possible, to match graduate students to the mentors best suited to both their area of study and local region, but due to the relative scarcity of experienced trained professionals that inspired Project SASI, this ideal mentorship was not always possible. In a few cases, graduate students did not contact mentors or were unable to establish more than initial communications. In others, communication was robust, positive, and ongoing throughout the duration of the graduate student's participation in Project SASI.

Engagement After End of Funding Period

The intention of Project SASI was to continue to provide the "beneficial legacy" that sits at the center of Franz's (2009) model of engaged scholarship (p. 35). Though articles like this one are one way that the model suggests such a legacy can be left, the primary focus was on a change in conditions; that is, a change in the way professionals work with students with sensory impairments in rural and remote locations (Franz, 2009). To retain these newly trained professionals, it is necessary not only to build a connection between graduate students and their communities, but to connect those graduate students and communities to professional and peer networks. This way, the connections between these newly trained professionals and resources continue to grow as more individuals are trained to work with children with sensory disabilities. In addition to the plan for the graduate students, a sustainability plan was created for the university partners and the states, which is briefly described below.

Graduate Students and Professional/Peer Networks. The Project SASI graduate students were tremendous resources to each other, and a desire to facilitate those connections as much as possible existed. This connection began by placing the graduate students in two cohorts and offering opportunities to interact with each other as time and distance allowed. An initial idea was to support an online forum exclusively for students, in addition to the normal in-class contacts. This support strategy received only lukewarm participation, but it was found that students had formed their own circles on several social media platforms (e.g., email, social media, the discussion section of their Blackboard courses). In fact, on an annual basis, only 70% of the graduate students rated the online support group as useful in building a community of learners. However, 80% of the graduate students did participate in the online support group a minimum of seven times per semester.

To assist with networking among the graduate students, two programs allocated funds for all of their graduate students to travel for an intensive weekend retreat that featured both workshop-style educational opportunities and a chance for students to display their own posters in a miniconference format. Although the majority of the coursework was provided via distance education, graduate students came together for face-to-face intensive weekends associated with some of their courses where they connected and bonded with others from their state and elsewhere. It was also found that live participation in videoconferencing led to connections between graduate students that lasted beyond the end of the program.

All graduate students shared one common course on children with multiple impairments, dealing specifically with cases where sensory impairments were comorbid with autism spectrum disorders. In this course, all graduate students were required to report a case study and comment extensively on the cases of others. This activity served to build a repository of at least 20 cases bound by similar rural settings, featuring students with autism, and being addressed by professionals at the same preparation level. This assignment not only facilitated better discussion than examples with well-established veteran practitioners,

but it also established connections between graduate students in different programs as they discussed the nuances of working in their regions.

Connecting graduate students to their professional learning networks improved over the course of the grant program. By the end of the program, several graduate students were funded for trips to national conferences. Most programs included a component that involved researching a professional learning network or joining a membership group, and all programs involved becoming familiar with the standards of practice from professional groups in the appropriate specialty area. As with most of the coursework, this familiarity was accomplished experientially, and graduate students were asked to apply these standards to cases on which they were working, and then reflect on how such standards shaped their practice.

University/Community Partners. Project SASI, on its own, could not accommodate all areas of need in the relevant states within the timeline of grant funding. Thus, it was very important that relationships be developed with the states to open the path for future graduate students, as well as maintain certified teacher presences in areas of need. Two primary sustainability agreements were put into place. The first was a series of memoranda of understanding (MOUs) between state departments of education and university partners, describing the ability of the university to continue to provide training and certification to students in that state and the guarantee that the state would continue to recognize those certifications. The second was another federally funded grant, allowing the project to continue (with a new title, Project CAT-SI: Collaboration and Assistive Technology for Students with Sensory Impairments: Addressing the Personnel Shortages in Rural, Remote and High-need Areas, and a focus on assistive technology) for four of the states. These actions were important accomplishments, but perhaps pale beside the connections with state and local leaders that formed the backbone of the project. Some of these leaders have now retired, but many are still with the second project and continue to identify potential graduate students, mentors, and areas of need.

Impact and Assessment

The presented data comes from several sources. First, qualitative data is available from personal reports of stakeholders involved in the processes above: the grant-writing team from the university, mentors, researchers, graduate students, and community partners. Second, documents were analyzed for information about project goals. Documents included end-of-year reports and a final overall project report on grant activities submitted to the funding agency, minutes from collaborative partner meetings, and mentor logs. Quantitative and qualitative data were collected in three surveys. One survey was sent to stakeholders (CPs, project advisory board members, etc.) partway through the project seeking formative data to use for project improvement. The second survey was administered to graduate students upon completion of their program and focused on satisfaction with their program and also addressed the intent to remain in the identified need area after certification. The third survey was sent to employers of program graduates.

These sources allowed triangulation of the data to evaluate this engagement model (see Table 1). This triangulation is important to offer complete data while avoiding confirmation bias in our results. The table included relates the data sources to the relevant pieces of the model.

Assessment of the Model

The model stressed five important connections: between university partners and CPs, between CPs and local community members (e.g., employers, mentors), between local community members and graduate students in Project SASI, between graduate students in Project SASI and university partners, and between graduate students in Project SASI and professional learning networks. This research was able to focus on three of these connections: university partners and collaborative partners, community partners and SASI graduate students, and SASI graduate students and university partners. Some data also exists on the connections between graduate students and professional learning networks. Similarly, more research is needed into the connections between CPs and local community members; there is anecdotal evidence that some of the most promising facets of the program happened when the connections between CPs and local community were high, but further data is needed to support this particular connection.

Table 1. Data Sources and Alignment With Community Engagement Model

Data Source	Participants	Aligned Area of Model
Report on grant-writing workshop	Grant-writing team	Engagement between state and university partners prior to project beginning
Minutes and reports from collaborative partners and Project Advisory Board meetings	State partners, outside community stakeholders, university partners	Engagement between state and university partners and stakeholders during project
Mentor logs	Mentors, community partners, graduate students	Engagement between program graduate students and local community during project
Community-engaged assignments	University partners, graduate students	Engagement between program graduate students and local community during coursework
Survey 1: Stakeholder Survey	Stakeholders involved with the project	Formative evaluation based on stakeholder input during middle of project
Survey 2: Graduate Student Satisfaction Survey	SASI graduates from Cohort 1 and Cohort 2	Engagement between graduate students and community; engagement between graduate students and university partners intent to retain in field
Survey 3: Employers of Project SASI graduates	Employers of SASI graduates	Engagement between university partners and community

University Partners and Collaborative Partners. The collaboration between university partners and CPs was the most long-term relationship present in this model. The initial grant-writing activities, described in detail above, included state collaborative partners from the inception of the project, and those voices shaped the grant activities. The collaboration continued with the partner meetings, and these settings provided numerous adaptations that developed the program throughout the funding period. Each Project Advisory Board meeting (members were CPs, a parent of a child who was deafblind, and a school psychologist who specialized in children with autism) was followed by a meeting evaluation, and the overall feedback as to the meetings' effectiveness was positive, with one CP stating: "Having an agenda is definitely helpful, and the professors/grant coordinators really do stick to it. I appreciate all of our questions being answered, too, and the fact that they made sure all of the collaborative partners were able to talk."

The collaborative partners who responded to the Stakeholder Survey as a part of the formative evaluation process provided valuable feedback that reinforced that we were on the right track. For example, they said, "Excellent model of training that is definitely going to meet a significant need" and "Your documentation is the best I have seen from distance programs. The expectations of students were top notch, and therefore, well-rounded teachers are coming out of your program. Keep up the good work!" Finally, the collaboration has continued with MOUs of ongoing partnerships and a subsequent federal grant, based on the lessons learned and new need areas identified through the results of Project SASI. MOUs to sustain collaboration for 10 years beyond the grant period to meet personnel needs were developed with all state partners'

departments of education except for Texas and Mississippi. Texas had already provided grant funding for three of the personnel preparation programs through Region 17 Education Service Center and Texas School for the Blind and Visually Impaired, so no MOU was needed.

Community Partners and SASI Graduate Students. Data about the connection between SASI graduate students and the community partners comes from four sources: mentor logs, the Graduate Student Satisfaction Survey, employer satisfaction surveys, and the community-engaged assignments. Of these sources, the mentor data was the most mixed. Some logs contained considerable detail of multiple visits and connections; others were sparse and indicated considerable communication problems. This data was mirrored in the Graduate Student Satisfaction Survey; one student commented that "more vetting needs to be done for the [program] mentors" and another that they had trouble "know[ing] the requirements of [their] job . . . my mentor was not very helpful." On the other hand, one student had a "great mentor" that had "tons of experience in the field," and 68% of graduate students rated their mentor as having an "Excellent" level of expertise, the highest possible rating.

Of the 25 employers (of 38, a 65.8% response rate) that completed the Employer Satisfaction Survey, 96% stated the graduate was well prepared or sufficiently prepared for the first year of teaching in his or her new role. One employer commented, "TTU provides students with the knowledge to continue to develop skills in their area of focus. It is an excellent program!!" Another employer commented,

> We are thankful for the TTU program . . . and for the delivery of instruction that enables the participant to maintain a teaching job—with the mix of online classes and some on-site time at TTU. This program is extremely helpful for our needs in rural Idaho. Our teacher gained the skills and knowledge that she needs to serve our students.

The community-engaged assignments present much smaller pictures of engagement. In the deaf and hard of hearing curriculum, graduate students were nearly universally positive on a course assignment where they had to sign and read a book to a group of local students. In writings afterward, these students were often able to connect their learning to the needs of the broader community. Similar positive stories came from many internships: 79% of graduate students rated the quality of their internship as "Good" or "Excellent," and comments were supportive of the "very valuable . . . evaluation process used by intern supervisors" and the "strength [of] the . . . internship opportunity."

SASI Graduate Students and University Partners. The challenge for this connection was to go beyond the traditional role of faculty and student relationships; as graduate students struggled with problems, they needed to communicate them to the faculty, and then the faculty needed to address those issues through curriculum supplements, special attention, or collaboration efforts. Since much of this communication was informal, analysis of these connections is found on the data from the Graduate Student Satisfaction Survey. This survey was taken by graduates of the program and thus gave responses from graduate students who completed all parts of the SASI experience. This timeframe allows graduate students to comment reflectively on their experience as a whole. Thirty-seven of the 38 graduate students completed the survey (97.49% return rate). For the item "Your overall rating of your graduate education experience at TTU," 88% responded that the program overall was excellent or good. For the item "What is your overall evaluation of how well the TTU personnel preparation program prepared you?" 95% responded they were well prepared or sufficiently prepared by the program for the first year of teaching in their new role.

Descriptive statistics from quantitative data suggest that SASI was very successful in meeting the educational needs of graduate students; 86% of graduate students rated the "Preparation for working with students with sensory impairments and autism" as "Good" or "Excellent" on a 5-point Likert-type scale, 91% of graduate students rated the "Preparation for working with students in your sensory impairment program" as "Good" or "Excellent," and 79% rated their preparation in instructional strategies for students with autism and sensory impairments as "Good" or "Excellent." Additional comments from graduate students indicated that their relationship with their professors contributed significantly to this result. One

graduate student commented, "The professors and support staff are easy to get hold of with questions and respond quickly." Another said, "The professors were very knowledgeable and available to answer questions and support learning through additional material or experiences."

Although graduate students were building feelings of connection to their local community, some felt disconnected from the community at the university. Several students commented on a desire for "more face-to-face" activities, while also acknowledging the limitations of the hybrid format. For example, one student, in response to a survey item about the weaknesses of the program, commented that she "enjoys face-to-face classes more than online . . . the same things [that were weaknesses, the online delivery] were what really made it possible for me to complete this program."

Next Steps and Future Research

The project deliberately set out to employ a robust framework for community engagement, integrating many separate aspects of engagement. Although this strategy was effective, it made it difficult to isolate individual engagement strategies. However, Project SASI did complete 5 years of the project and used carryover funds to continue during Year 6 with a no-cost extension. The project was completed in September 2017. Nineteen of the 20 graduate students of Cohort 1 completed their programs. One student dropped during Year 1. Of the 23 Cohort 2 graduate students, 21 completed their coursework. Two students dropped after taking some coursework. The SASI graduate students represented all six participating states and were enrolled in all four program areas of sensory impairments included in Project SASI. Forty graduate students successfully completed the Texas Tech Graduate Certificate in Sensory Impairments and Autism.

During Year 6, Cohort 1 and 2 former students were offered the opportunity to complete their master of education degree and/or work toward completion of the TTU Graduate Certificate in Deafblindness. Sixteen former graduate students took advantage of this offer; 14 students enrolled in the MEd program; five students were in the TTU Graduate Certificate in Deafblindness Program; and three enrolled in both programs. One student enrolled in the Orientation and Mobility Program. Of the Year 6 graduate students, four completed the TTU Graduate Certificate in Deafblindness; 11 completed the MEd program; two completed both programs. One student completed the Orientation and Mobility Program.

Further research on the individual strategies, such as incorporating community partners in the grant-development process, is needed to better understand the connections between community engagement and meeting personnel shortage needs in rural areas. Additionally, more research is needed on the sustainability aspects of the program. In particular, since many of the connections were built between graduate students in the program, program faculty, and community leaders, additional research is needed to study how connections are sustained when key individuals are no longer directly connected to the program.

Upon completion of the Texas Tech University Graduate School Certificate in Sensory Impairments and Autism, 37 (92.5%) of the newly trained professionals served 25% more students with sensory impairments and autism in their states. By the end of Year 5 of the grant, 45% of the graduates maintained employment in the area of their training for at least 3 years (data is still being collected regarding this performance measure). Since the graduates are employed in their area of specialization and in a previously identified area of need, the primary purpose of Project SASI has been achieved. One area that could be improved is the connection between some SASI graduate students and the state systems where they live. On the satisfaction survey, one graduate commented that "[this state's] Department of Education was very confusing, [I and] others have waited a long time for their certification through the state." Another graduate noticed the very real problem with licensure: "In [my state], the graduate certificate is not recognized, and we are having to take the [licensure test from a different state] to get the [State Teaching Standards Board] to accept [our] certificates."

Conclusion

Community engagement as a way to increase personnel in an area of personnel shortage to serve students with sensory impairments is an idea well worth explor-

ing, especially in rural and remote areas. As this model displays, the core of a successful engagement strategy is threefold: engaging community partners from the very beginning of a program or project, continuing to build connections between multiple stakeholders throughout the project, and having a sustainability plan in place at the end of the project. Further research is needed on which components of the engagement strategy are of greatest impact in alleviating personnel shortages, as well as how sustainability plans persist through changes in personnel.

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