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The Scope of Our Country: Expanding Access to Higher Education through Community Partnerships with Texas Tech University

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Abstract

The geographical scale of West Texas provides a unique opportunity to demonstrate active engagement between Texas Tech University and the residents of this vast region. The institution responded to community requests and collaborated to develop four new, rural off-campus teaching and research sites and expand the presence of an existing site. These initiatives focused on expanding access to higher education, engaging in outreach research and scholarship, and enhancing early childhood through 12th grade school partnerships. Technology networks and distance-delivered academic resources were leveraged to achieve these goals. State guidelines for the development of new off-campus sites provided limited guidance for rural educational delivery of research partnerships. As a consequence, the institution's engagement with rural communities yielded increased understanding of these institution-community partnerships, their symbiotic benefits, and the constraints that should guide them.

Introduction

Although Texas Tech was not founded as a land-grant institution, since its inception it has been engaged in meeting the needs of West Texas communities by providing leadership in agriculture, education, engineering, home economics, and technology. In 1923 Texas Tech University was established by the Texas Legislature to

> elevate the ideals, enrich the lives and increase the capacityof the people for democratic self-government and particularly give instruction in technological, manufacturing, and agricultural pursuits and domestic husbandry and home economics. . . . *(General Laws of the State of Texas Passed by the Thirty-Eighth Legislature at the Regular Session 1923, 32)*

As curricular offerings expanded, the need for medical education and services for the region became a legislative priority. In 1969 the Texas legislature created the Texas Tech University School of Medicine, and regional centers were opened in Amarillo, El Paso, and Odessa, in order to serve the needs of West Texas residents. As the need for health care services emerged as a State priority, additional fields of study were delivered at off-campus sites, including nursing, pharmacy, and allied health and biomedical sciences. The Texas Tech University Health Sciences Center "has as its major objectives the provision of quality education and the development of academic, research, patient care, and community service programs to meet the health care needs of the 108 counties of West Texas, which comprise 48% of the land mass and 12.5% of the population of the total state" *(Texas Tech University Health Sciences Center 2005)*.

"The new strategic plan included eight goals: access to higher education, academic excellence, research, engagement, technology, partnerships with external entities, human resources and infrastructure, and tradition and pride and accountability."

Together Texas Tech University and the Texas Tech University Health Sciences Center share responsibility for providing higher education leadership for this vast service area. The 131,000 square miles included in this region exceeds the area served by the educational system of any state other than California, Alaska, or Texas itself. Although there are other regional institutions serving in this vast area, Texas Tech University enrolls the largest number of undergraduate and graduate students and offers the greatest variety of academic programs. In 2004, Texas Tech's enrollment was the fourth largest in the state of Texas, at 28,549 *(Texas Higher Education Coordinating Board 2005)*. The three larger institutions (University of Texas at Austin, Texas A&M University, and University of Houston) were located more than 400 miles from Texas Tech. Given this context of an expansive service area, in 2000 Texas Tech adopted the Health Science Center model of establishing multiple educational satellites in response to requests from communities for enhanced access to higher education resources. Although utilized by the

TTU Health Sciences to meet the need of rural learners and patients, the model of community partnerships to deliver higher education content and research services to nonrural communities had not been tested by any other general academic institution in the state.

Vision and Strategic Plan

In 2000 a strategic plan titled "A Clear Vision for the Future" was initiated, with a focus on Texas Tech's commitment to engagement with and responsiveness to the communities in West Texas *(Texas Tech University 2000)*. The preface includes a 1925 statement from Texas Tech's first president, Paul W. Horn, which set the context for the university's engagement with the region:

> Everything that is done on these West Texas Plains ought to be on a big scale. It is a country that lends itself to bigness. It is a country that does not harmonize with things little or narrow or mean. Let us make the work of our college fit in with the scope of our country. Let our thoughts be big thoughts and broad thoughts. Let our thinking be in worldwide terms. *(Horn 1926, 27)*

"A Clear Vision for the Future" included a vision of "engaging society" and goals, priorities, and strategies reflective of the institution's integration and application of themes from the national dialogue on engagement. The new strategic plan included eight goals: access to higher education, academic excellence, research, engagement, technology, partnerships with external entities, human resources and infrastructure, and tradition and pride and accountability. This strategic plan bore a striking resemblance to the framework set forth in *Returning to Our Roots*, "a statement of principles to guide academic reform" *(Kellogg Commission 1999, 5)*, including the focus on learning communities, access and opportunity, an education of value, containing costs and accountability, flexibility and responsiveness, and meeting new needs through distance and off-campus instruction.

It was in this context that Texas Tech began an ambitious effort to partner with several communities in order to advance their economic development through expansion of educational access, outreach research, and early childhood through twelfth grade school (EC-12) partnerships, facilitated by expansion of technological infrastructures. The president allocated resources, assigned leadership roles, and encouraged academic participation from those academic programs that had long histories in delivering

curricula to students located significant distances from the Lubbock campus. Diversified resources from state, federal, regional economic development, community, and private sources supported staff and faculty salaries and operational expenses at the sites. Within two years (2000-2002), Texas Tech partnered with four communities across northwest, west, and central Texas in response to community initiatives. This responsiveness resulted in the development of higher education teaching sites located in Amarillo, Abilene, Fredericksburg, and Marble Falls, Texas. Once more, the geographic scale of this endeavor is notable, as nearly 500 miles separate Amarillo and Marble Falls, Texas.

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Given the delayed commercial delivery of narrow and broadband infrastructure in rural environments, the distance between sites was overcome by the development of an extensive telecommunication network between Texas Tech in Lubbock and the four sites. In addition, an existing off-campus teaching and research site in Junction, Texas, was included in the development of this initiative.

Rural Communities and Economic Development

The region of West Texas includes significant diversity of people and geography, as well as health care, educational, and economic needs. However, some rural economies share common challenges, including "geographic isolation, infrastructure deficiencies, poor links with metropolitan and global markets, weak community infrastructure for business development and growth, and the flight of skilled human capital to metropolitan regions" *(NGACBP 2003, 1)*. In *Innovative State Policy Options to Promote Rural Economic Development*, the NGA Center for Best Practices recommends that colleges and universities can serve as "focal points for targeted workforce training, technology access, and research and development for dynamic rural clusters" *(4)*.

As the nation's population continues to concentrate in suburban and urban regions, the problem of sustaining rural communities becomes more and more pressing. Despite initiatives in distance and blended/hybrid delivery of curricula, much of higher educa-

tion regulation and policy continues to focus on enrollment in large face-to-face environments where suburban and urban residents have numerous higher education choices within a limited commuting distance. State funding follows these enrollments, continuing the downward trend in funding for rural educational (K-12) and higher education initiatives. In addition, much greater diversity of economic development activity is found in the suburban and urban regions of the United States. Consequently, collaborative relationships with rural communities are critical to sustain leadership in Texas and the nation's vast regions beyond large population centers.

The partners in this engagement activity had in common the desire to attract Texas Tech's presence to their communities with a focus on fostering economic development. However, each community had unique economic and educational characteristics that shaped its relationship with Texas Tech. For instance, the economic development interests in Amarillo were focused on expansion of engineers in the regional workforce and partnerships with existing Department of Energy operations. The City of Abilene had been engaged in a $70 million downtown revitalization effort and sought collaborations between Texas Tech computer science and regional economic development interest in artificial intelligence and human-centered computing. Fredericksburg initiated its dialogue with Texas Tech from a historic commitment to access to higher education opportunities in its community and a desire to support growth in health care, tourism, and EC-12 education workforces. The economic development interests in Marble Falls included expanding health care, retail, EC-12, and software industry initiatives.

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This diversity of community needs required flexibility on the part of a large, public university. Written agreements were negotiated with the various stakeholders at each of the sites, which provided important foundational support for the nascent efforts of the university and community partners. In addition, the communities provided essential funding and resources for these initiatives through the contribution of private donor, nonprofit, business, and governmental

resources. Each community also provided facilities for the initial operations of the higher education teaching and research sites.

Expansion of Educational Access

In order to expand access to higher education opportunities throughout this large region and within these specific communities, Texas Tech began an aggressive expansion of degree programs approved for distance and off-campus delivery. In 2000 seven distance degree programs were offered. By the end of 2005, seventeen degree programs, including two doctoral programs, had been approved for distance delivery by the state higher education board and regional accrediting association. At the higher education sites, programs were offered that had been identified as meeting high regional workforce needs. Initially, graduate degrees were introduced based on regional workforce assessments and the lack of access to graduate-level offerings. These included educational leadership for EC–12 educators preparing to serve as school principals, and computer science, software engineering, and industrial engineering programs. An interdisciplinary, undergraduate degree completion program was offered that provided upper-division coursework for students seeking workforce preparation in education, general business, or tourism. Texas Tech's distance degree offerings were promoted in order to leverage existing educational resources and supplement students' curricular choices. At two of the sites, Texas Tech and the TTU Health Sciences partnered to provide an upper-division nursing program.

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In order to facilitate the creation of degree pathways, an expectation of cooperation rather than competition guided academic relationships between Texas Tech University and TTU Health Sciences and external relationships with regional community colleges, private universities in Abilene, and a public university in the Texas Panhandle. In central Texas, a regional community college offered a licensed vocational nursing certificate and an associate degree in nursing. The TTU Health Sciences Center expanded its online undergraduate degree in nursing and began offering a mas-

ter's degree in nursing by utilizing the video conferencing networks at the higher education teaching sites. The addition of these two degree programs created a complete degree pathway in nursing from high school graduation to an existing distance doctoral partnership between Tech and another Texas public institution. This degree pathway was an important statement of support to a growing health care industry in the region.

At two of the sites where undergraduate programs were offered, formal agreements were developed with regional community colleges to provide lower-division general education curricula and transfer assistance. In Abilene, where private universities had long histories of responsiveness to community needs, "no competition" agreements were forged and leveling curricula were developed to support the transition from undergraduate math and science degree programs at Abilene's three private universities to Texas Tech's graduate engineering programs. In the Texas Panhandle, a regional public institution located south of Amarillo received economic development funding to grow undergraduate engineering programs while Texas Tech focused on graduate engineering education, paving the way for another degree pathway.

This expansion of educational access was supported by Texas Tech's Strategic Plan, the Texas Tech University System Strategic Plan, and the State of Texas master plan for higher education, Closing the Gaps: The Texas Higher Education Plan *(Texas Higher Education Coordinating Board 2000)*. The Texas master plan seeks to "close the gaps in participation rates across Texas" by 2015. In addition to expanding access to increased numbers of adult learners, the new higher education teaching sites provided access to undergraduate and graduate programs for categories of students who were underrepresented on the main campus. The off-campus students typically attended on a part-time basis and were employed in industries related to their degree programs. The graduates from the higher education teaching sites have returned to their existing roles and often have been promoted into new roles due to workforce shortages. The alumni of these sites have assumed leadership roles in their rural communities in the fields of education, engineering, and nursing.

Outreach Research

Along with delivery of curricula, from inception there was an acknowledgement that the higher education sites would have a multifaceted mission that would include the delivery of degree

programs and execution of outreach research. Resident faculty at the sites were charged with responsibility for the development of research partnerships and generation of collaborative scholarship with regional and community entities. Outreach research has been defined as

> applied research, capacity-building, evaluation studies, policy analysis, technical assistance, and technology transfer . . . when they are conducted in collaboration or partnership with schools, health organizations, nonprofit organizations, businesses, industries, government agencies, and other external constituents. *(Church et al. 2002-2003, 146)*

At three of the five sites, outreach research agendas have been implemented. Faculty in residence at these sites focused their research efforts on lead economic development targets in each region. In the Panhandle region, industrial engineering faculty collaborated with personnel at a Department of Energy facility in robotics work and collaborated with regional institutions and state agencies to develop grant applications to test an assistive mobility device. In Abilene, computer science faculty and regional economic development entities explored opportunities for redesign of the downtown area, and research activity was generated around the themes of capability engineering, robotics, and human-centered computing. At the Junction site, located along the South Llano River, faculty and graduate students worked with community entities, regional water organizations, and state agencies on various biological and environmental research projects.

Outreach research activities expanded faculty and graduate student opportunities from those available at the main campus. For biology faculty and students, central Texas offers different habitats and environments from those found in Lubbock. Applications for computer science and industrial engineering research were increased and new research agendas formed by partnerships with economic development activities at Abilene and Amarillo. Faculty generated numerous publications, grant applications, and new funding as a result of partnerships with external entities. However, the unique feature of these research activities has been the collaboration between researchers and community entities to generate funding and scholarship that directly addressed needs identified by the partnering communities.

Early Childhood through 12 Partnerships

EC-12 educators in rural regions of Texas have limited resources to acquire the advanced educational experiences requisite for school leadership roles. Therefore, mutually beneficial partnerships with local school districts and their leadership were important components of the higher education teaching sites. Depending on the academic and research interests of the site, these partnerships took on varied expressions. Faculty members from Texas Tech's College of Education were the first to agree to deliver graduate degree and certificate programs to the sites. As a consequence, relationships were formed with school district superintendents, principals, and teachers early in the initiative. These relationships supported recruitment and enrollment of graduate students into the programs, and also established opportunities for collaborative professional development, grant writing, and research.

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Where the graduate program in education was not offered due to "no competition" agreements, staff and faculty at each site developed working relationships with school district leadership around disciplines other than education. Abilene faculty and staff members have hosted the NASA mobile simulator and laboratory, developed requests for math, science, and engineering programs from elementary to doctoral education, and sponsored numerous math and science activities for middle and high school students. Amarillo faculty and staff members worked with the Texas Alliance of Minority Engineers in planning regional robotics competitions and sponsoring robotics teams.

In central Texas, the Fredericksburg and Marble Falls sites participated in technology networks and initiatives with regional school districts, provided technology support for community education, and initiated a federally funded rural math and science education program. The Junction site, with 400 acres along the South Llano River, hosts a federally funded Outdoor School, a residential science program for elementary and middle school students, teachers, and parents that includes a hands-on, field-based, and investigatory science curriculum.

Expanded Technological Infrastructures

Rural regions of the United States and Texas continue to lag behind nonrural regions in access to high-speed Internet at work and home. "Half of all adult Americans who live in non-rural areas can get online with a fast connection at home or work. By contrast, just more than one-third of rural Americans can do this" *(Horrigan and Murray 2006, 3)*. In the least populated regions of West Texas, community broadband access is often limited to schools and community libraries. The creation of teaching sites that provide stable and secure access for education and workforce training addresses has proven to be an intermediate solution to this gap until wireless networks are completed to provide universal broadband access.

In this transitional period, universities have technological resources and expertise that can be shared with communities to expand educational access, outreach research, and EC-12 partnerships. In some cases, rural communities may have access to regional or state funding for workforce technology training and equipment that can support delivery of higher education curricula. In the case of the TTU partnerships, these resources were brought together to create networks and classrooms to leverage the delivery of courses to multiple sites when deemed academically appropriate. Texas Tech's instructional technology and telecommunications experts designed a network that connects Tech's higher education teaching sites, as well as dozens of school district, agricultural extension, and business sites across Texas. Partnerships with existing and expanding networks serving EC-12 and higher education were utilized to deliver numerous distance and off-campus degree programs. The higher education teaching sites provide staff support with expertise in administrative and instructional technology in order to address the varied needs of faculty, students, and staff members at the sites. Web sites were built for each of the higher education sites, and a Web presence for distance and off-campus education has been the primary method of communicating to all constituencies.

A broad array of instructional technology resources was utilized to deliver courses, depending on course content and student and faculty needs and preferences. Ongoing assessment activities provide feedback from students and faculty and are used to improve the delivery of educational support services. Assessment methods include surveys of student and faculty satisfaction with technology and educational support services, student focus

groups on academic experiences, and administration of national student satisfaction instruments. Assessment findings indicate that faculty attitudes toward the use of technology in delivering instruction have transformed as a result of the opportunity to teach at the off-campus sites. Although some of the participating faculty members were highly accomplished in the use of technologically assisted instruction prior to delivering courses at the sites, others had little or no experience other than face-to-face delivery of instruction at Texas Tech in Lubbock. An unanticipated benefit of the higher education teaching sites was the opportunity to support faculty in the use of technology away from the main campus in relatively focused time periods. When addressing the issue of delivering a medieval history course from a teaching site back to Texas Tech in Lubbock, a professor exclaimed, "This will advance my pedagogical approach to my discipline!"

A further benefit to the institution was generated by the need for expansion of infrastructure to accommodate the new higher education teaching sites. Texas Tech implemented a redesign of data fields within its existing student information system to capture information on course delivery location and predominant instructional modality. This advancement supported faculty members in the use of technology in course delivery and assisted the institution in assessing pedagogical changes in delivering course subject matter.

Symbiotic Benefits

The engagement activities described in this article between Texas Tech and participating communities has become symbiotic, with mutual benefits accrued as a result of these partnerships. For the communities, these benefits include: (1) expanded access to educational opportunities for residents; (2) increased flow of qualified professionals into targeted workforces; (3) relationships between regional economic development interests and resident faculty research interests; (4) infusion of EC–12 leadership and professional development resources; (5) increased economic activity generated by Texas Tech's employment of faculty, staff, and local contractors; expenditure of operating funds in local businesses; and direct financial aid to students; and (6) infusion of technology expertise and network access. In turn, Texas Tech benefited by: (1) increasing access to and enrollment of underrepresented student populations; (2) increased presence of Texas Tech alumni in leadership roles in schools and corporations, (3) expanded research agendas and environments for faculty and graduate students

beyond those available at the main campus; (4) expanded opportunities for field-based EC-12 preparation programs and relationships; (5) infusion of new funding from expanded donor, alumni, foundation, and governmental resources; and (6) increased technological and pedagogical expertise in providing distance and off-campus instructional delivery.

Constraints

After several years of experience in these partnerships, significant constraints have been identified that continue to reshape the model of rural higher education teaching sites and the resulting institutional-community relationships. (1) Prior to engaging in formal dialogues with communities, the institution should assess how the prospective partnerships align with institutional priorities, as well as academic expertise and interest of its faculty. (2) State guidelines should be examined in order to understand what incentives exist, if any, to expand access to limited populations and rural regions. Most regulatory authority for expansion of access is based on enrollment objectives that can only be achieved within high population, and thus nonrural, regions. As a consequence, partnerships need to be examined in this context and understood from the outset as targeted activities that support access and research objectives that have "added value" despite the fact that they will not, in the short term, generate significant numbers of full-time enrollments. (3) Thorough needs assessments should be conducted in the early stages of dialogue in order to identify high-need academic offerings and potential research activities. The results of the needs assessment should be evaluated by the institution in order to determine the timeline and sustainability of the engagement activities, identify alternative methods for delivering needed resources to communities, and compare costs for the different alternatives. (4) If the determination is made to establish a teaching site partnership with a community, initial written agreements should encompass all explicit and implicit expectations between partners, including specific details about the expectation of financial contributions

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from all sources and the timeline for commitment of each support line, facility support, annual enrollment targets, annual research funding targets, noncompetition relationships between partnering institutions, regional employment of staff and faculty, and exit strategies should the partnerships prove unsustainable. (5) Creation of regional advisory boards should be considered to provide a forum for collaboration and communication as the project develops and challenges to the initial written agreements are encountered. In particular, the implicit expectations of partners were challenged as the TTU teaching and research sites developed. In every community, stakeholders experienced dissonance between the cultures of higher education and for-profit industry. While Texas Tech pursued a rapid process of acquiring internal and external approvals for courses and degree programs delivery, regional stakeholders questioned the time required to initiate program offerings. The formation of advisory groups for each community partnership provided a forum for dialogue about expectations, growth or lack thereof in enrollment and research activities, and resource allocation concerns.

Summary

Texas Tech's initiatives to partner with communities across a 131,000-square-mile region has provided a new model for institution-community partnerships in Texas rural areas. Since the inception of this activity, two more rural educational centers have been created by rural communities in partnership with other community colleges and universities. The benefits resulting from TTU's teaching and research site partnerships have only just begun to be measured in terms of student access to higher education, outreach research, EC-12 partnerships, and technology infrastructure expansion. The partnerships have advanced public understanding of the role and value of higher education and enlightened Texas Tech's understanding of values and priorities of each of the engaged communities. The initiatives have illuminated the pressing needs for extension of access to higher education resources to learners and communities via technology, which is an essential component in the next iteration of the institution's strategic plan. The resulting learning from and refinement of this model for institutional and rural community partnerships has contributed to extending the vision articulated by President Horn in 1925: "Let us make the work of our college fit in with the scope of our country. Let our thoughts be big thoughts and broad thoughts. Let our thinking be in worldwide terms" *(Horn 1926, 27)*.

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Prior to moving to Texas in 1997, Dr. Paton served as assistant dean of Student Affairs at the University of Southern California and taught in the Departments of Counseling Psychology and Higher Education. After moving to the Texas hill country, she served as dean of Institutional Research, Planning and Effectiveness, and Title III principal investigator at Schreiner University in Kerrville, Texas. In 2001 she began her work with Texas Tech by serving as the initial academic director for TTU at Fredericksburg and TTU at Highland Lakes. In 2002, Provost Marcy asked that she relocate to Lubbock to serve in her current role.

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