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Debra A. Giambo
Florida Gulf Coast University, dgiambo@fgcu.edu

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The Zuni Pueblo: Connections through Student Inquiry Projects

Debra A. Giambo
Florida Gulf Coast University

Abstract

In a university course on the Zuni Pueblo in New Mexico, students engaged in a scaffolded inquiry project to consider connections between individual major areas of study or intended career paths and the Zuni Pueblo. Students completed project tasks prior to, during, and after the trip, and analyzed information gathered to answer their inquiry questions. Topics of interest were shared with the Zuni Tribal Council and a Zuni community partner for discussion and input. After completion, projects were shared with the class, the Tribal Council, a Zuni community partner, and the university community. This article will (1) explain the organization, pedagogy, and processes of implementation of such a scholarly project in an undergraduate service-learning, study-away, spring break course and trip and (2) share project outcomes, including student discoveries, in brief, to contribute to the sparse extant literature on the Zuni Pueblo, especially in contemporary Zuni and especially as relates to a variety of fields.

Keywords: inquiry, Zuni, indigenous, study away, service learning

Introduction

Transformative learning brings significant change to students' approaches to the world and to their position in it (Mezirow, 2008; Paul & Quiggin, 2020). Study-away experiences can transform students' growth as global citizens (Hovland et al., 2009) and support transformative learning. Additionally, the many benefits of course-based, service-learning combined with study-away experiences include community interactions supported by regular structured reflective experiences, and the combination and intersection of these experiences support transformative learning (Giambo & Garrido, 2024a, 2024b).

Student benefits and outcomes from engaging in scholarly investigations are clear (Brooks et al., 2019; Stanford et al., 2017). Schneider (2017) submits that investigation skills are needed in all disciplines and that all students can benefit, regardless of major area of study (Schneider, 2017). Inquiry pedagogy can support students' development of articulation, supporting assertions and using feedback (Lower, 2022). Warren's (2019) theoretical exploration suggests that adding a

global dimension to inquiry-based pedagogy can contribute to and enhance the potential for transformation.

The Zuni Pueblo has been long studied by anthropologists (e.g., Bunzel, 1758; Casenueve, 1980; Cushing, 1896, 1979; Stevenson, 1904), some more welcomed and helpful than others to the community. Contemporary issues and solutions in the Zuni Pueblo are less prevalent in the literature. Universities can contribute via course-based, service-learning experiences, especially with a cross-cultural study-away component involving students of various major areas of study (Giambo & Garrido, 2024b), which includes an inquiry project supported by community interactions, observations, and public document review. Students also benefit by developing inquiry and analysis skills.

High-Impact Practices

The Association of American Colleges and Universities' (AAC&U) definition of high-impact practices in higher education includes community-based experiential learning, cross-cultural study, service-learning, community-based learning, and undergraduate scholarly work (AAC&U, n.d.). Longitudinal investigation indicates positive effects of practices including collaborations, scholarly projects, study abroad, and service-learning on intercultural effectiveness and socially responsible leadership (Kilgo et al., 2015). When students are provided with high-quality interactions with professors as well as opportunities to connect their learning to experiences in the world, high-impact behaviors (e.g., engaging in concentrated effort, interactions, diversity experiences, reflection, and integrating learning) can be positively affected as well (Ciesielkiewicz et al., 2020). Additionally, integration of high-impact practices into the curriculum of a short-term, study-abroad, service-learning course demonstrated positive effects on perceived intercultural competence and transformative learning (Cotten & Thompson, 2017).

Transformative Education

Mezirow (2005) defines transformative learning as

> the [metacognitive] process by which we transform problematic frames of reference (mindsets, habits of mind, meaning perspectives)—sets of assumption and expectation—to make them more inclusive, discriminating, open, reflective and emotionally able to change. Such frames are better because they are more likely to generate beliefs and opinions that will prove more true [*sic*] or justified to guide action. (p. 26)

Change in habits of mind, as evidenced through interpretations of beliefs, memories, value judgements, attitudes, and feelings, are more profound than changes in points of view (Mezirow, 2005). Reassessment of our reasons behind our habits of mind, in transformative learning, creates an essential basis for action-taking that is aligned with new beliefs and opinions. Transformation

occurs through regular, critical reflections (i.e., written, oral, individual, group) and value for continued reflection and action based on transformed insights (Mezirow, 2005).

Study-away Experiences

Study-away experiences can be more accessible than study-abroad experiences, and they can support development of cultural competencies connected to career aspirations (Lane et al., 2017) and promote global learning (Hovland et al., 2009). With intentional design, study-away programs can provide an opportunity for reflective learning with active, participatory immersion. Work experience with multicultural populations that develops cultural competence can meet course-based learning objectives (Lane et al., 2017). Course-based study-away programs can be transformative (Lee, 2017), and with reflective opportunities, students can receive support in their development and understanding of personal values (Homeyer at al., 2017). Study-away experiences can support development of students as global citizens with "intercultural competencies, multiple perspectives, ethical awareness, and deep knowledge" (Hovland et al., 2009, p. 483).

Course-Based Service-Learning Experiences

Course-based service-learning connects students to problems in the world, supports deeper learning, and validates students' civic engagement (Arellano, 2018). Integrating service-learning experiences with related projects into a course can provide opportunities to apply learning in meaningful ways to benefit students and the community (Manegold et al., 2020; O'Brien et al., 2017). Walker and Walker's (2018) literature review demonstrates increased student benefits in course-based service-learning experiences as compared to those in non-course-based service, especially with access to regular structured reflection. Additionally, course-based service-learning with meaningful reflection opportunities can affect not only skills needed to succeed academically and professionally but can transform students' plans for their professional future, creating more politically engaged and community-involved students (Astin et al., 2006; Billig et al., 2005; Cohen & Kinsey, 1994; Eyler et al., 1998; Seider et al., 2011).

There is a lack of literature on combined course-based, service-learning, study-away initiatives (Giambo & Garrido, 2024a, 2024b) and also on scholarly student work within such an experience. This article describes the implementation of an undergraduate scholarly project within the context of a course-based study-away, service-learning experience. (For a more in-depth exploration of the transformative nature of these experiences, see Giambo & Garrido, 2024a.) The focus of this article is on the (1) organization, pedagogy, and processes of implementation of a scholarly inquiry project in an undergraduate service-learning, study-away course and (2) findings from 17 students' inquiry projects to contribute to the relevant literature on the modern-day Zuni Pueblo in a variety of fields.

Methods

Inquiry Project Overview

The project was interwoven with, supported, and grew from course activities. Prior to our service-learning trip, classwork focused on tribal history, culture, arts, religion, language, and connection with Anglos. During spring break, the class traveled on a 10-day service-learning trip to Zuni in which students interacted with community members. Additional learning opportunities enhanced the experience, like speakers from the Zuni community and visits to historic sites, including the cultural center and a craftsman cooperative. Daily group reflections and individual note-taking and reflections supported learning.

The scholarly inquiry project connected the Zuni Pueblo to students' major or minor areas of study or their intended career path, and topics were chosen by the students following their initial review of literature, class discussion, and individual consultations. The purpose of the project included motivating students to connect more deeply with the Pueblo on a topic of specific interest and in a manner that enhanced students' observation and inquiry skills, developed realizations regarding judgement, assumptions, frames of reference, and habits of thinking, and supported developing profession-related confidence and competence. According to student data, the project, their new knowledge, applications of that knowledge, and their experiences presenting their work to a wider audience helped students stand out in graduate school applications and courses and in job applications (Giambo & Garrido, 2024a).

Author/Professor Positionality

The scholarly inquiry project was designed and implemented in the course by the course professor, the author of this article, as part of the course requirements (Giambo & Garrido, 2024b). The professor had previous experience intersecting the guidance of undergraduate students' research skill development with course content. It is critical to note that the author's positionality as course professor and, thus, connection to the students and their projects may color the interpretation of student findings. To counterbalance this effect, the answers to students' inquiry questions provided in this paper were gleaned directly from their project presentations (cited in the results section and listed in the reference section). Revisions from student presentations to the writing in the results section below involved combining information and revising for flow, but the author remained cognizant of the ethical requirement of staying true to the essence of the students' responses to their inquiry questions when citing their work, as is done with citations of any author's work.

Project Implementation and Context

After some initial reading to consider connections between individual majors/career paths and the Zuni Pueblo as well as course goals related to economic, social, and environmental sustainability, students (1) began to define their questions for investigation, (2) reviewed and analyzed the relevant extant literature and synthesized developing themes, (3) refined questions for

investigations, (4) engaged in observations and interactions on the trip to further develop answers, (5) continued to review, analyze, and synthesize literature upon return, (6) developed a presentation on their project and findings, and (7) presented their project to the university community in a research or community engagement symposium. Skill development was supported throughout project development.

The students' review of the literature was conducted in three stages. The development of the questions for inquiry were completed within the first stage. Within the first week of the course, students began their literature search with key terms related to Zuni and to their major, minor, or intended career path. For the second class, students brought topic ideas for discussion. Our university librarian also shared tips on effective literature searches. In-class work included literature analysis and synthesis using a graphic organizer (Utah State University Library, 2017). The literature search, analysis, and thematic synthesis work continued, and in the third week of class, students were expected to have developed up to three initial questions for inquiry. In-class discussions continued weekly for whole group peer review and support for project development or redirection, as needed.

Continuing work with the graphic organizer, students completed their literature analysis and synthesis by the sixth week of class during the second stage of the literature review. The graphic organizer outlined an analysis and synthesis of related literature with space for notes on article themes as well as emerging themes across articles to demonstrate how each selection contributed to answers to the questions. Students included citations and a reference list. This organization supported students' developing skills in literature analysis and synthesis.

Literature reviews continued toward the third stage: an in-class literature review presentation in week eight, which was the week before the spring break trip. The presentation included analysis and synthesis of a minimum of six documents (e.g., articles, book chapters, policy documents). The quantity of documents, at this point, was limited due to challenges in locating relevant literature, and subsequent review of additional documents was expected. The presentation structure included main literature themes as relevant to the chosen topic, strengths of the knowledge in extant literature, and critical gaps, and the presentations acknowledged potential project contributions to the literature.

Meetings with the Zuni Tribal Council and community partners provided opportunities for questions, discussion, and input on projects. Each student group met with the Tribal Council for almost three hours, and each council member and each student shared their interests and concerns about issues affecting the community. Project topics were shared in these discussions with the Tribal Council to gain their input. Council members questioned students on their interest in and connection to their topics and discussed concerns as well as ongoing and planned work toward solutions. Completed projects were shared back with all members of the Council with an invitation for continued open discussion.

While in Zuni, students engaged in opportunities to gather information to respond to their questions of inquiry. They interacted as a group with community members and experts, explored the culture through observation and active listening, met with tribal leaders, and had access to the tribal building, where archival documents were publicly available. During the trip, students kept a notes journal and engaged in regular structured group reflections (Giambo & Garrido, 2024b). Information gathered was analyzed to respond to students' inquiry questions. Following the trip, students submitted emerging inquiry answers, including (1) a reference to each source and (2) information that contributes to answers. Skills in analyzing data, triangulating data, and recognizing and addressing bias were supported throughout this process with class lessons, self-checking, cross-checking among students in class discussions, and multiple professor/student work reviews.

Student Inquirers

Seventeen students participated over two semesters. The first group included seven students (four females and three males; two seniors, four juniors, and one freshman) with majors in political science, psychology, finance, forensic studies, communications, and elementary education. Two students had minors related to diversity and inclusion. Ten participants in the second group (nine females and one male; one freshman, one sophomore, seven juniors, and two dually enrolled high school seniors, who were also university sophomores) had major/minor areas of study in elementary education, theater, social work, interdisciplinary studies, marketing, psychology, health, communications, and political science. Group one included seven students who all identified with diverse backgrounds (i.e., Mexican, Guatemalan, Indian, and Jewish). In group two, three students identified with a diverse background (i.e., Mexican, Cuban, and Nicaraguan), and seven students identified as white, non-Hispanic. Participants in post-graduation telephone interviews included six former students (one male and five females; five from group one, and one from group two). University Internal Review Board (IRB) approval was secured for the inclusion of students' projects in this article following the conclusion of the course. Students were contacted with an IRB-approved email that included information about the intended compilation of projects and a consent form. The consent form gave the options of project inclusion with citation of student as author, anonymous project inclusion, and project exclusion. All students chose to have their projects included with their names cited as the authors.

Information Gathering and Analysis

Information was gathered through interactions in open spaces with community members, tribal leaders, educators, employees of cultural agencies and medical facilities as well as through publicly accessible documents, information, and observations. Qualitative analysis support was provided to students through instruction in coding for categories and patterns and examining emerging themes to make meaning (Creswell, 2007). Students engaged in repeated readings of their notes from conversations and document review for meaningful development of answers to their inquiry questions. Class instruction and discussion included the concept of triangulation of information for credible conclusions (Patton, 1999). The purpose of the information analysis was

to gain deeper understanding in relation to students' inquiry questions rather than generalizable findings. Students were instructed on the importance of citing community members in a manner that was not identifiable, and student work was reviewed and revised to ensure anonymity in reporting. Students had access to community members, educators, and employees because of their service work while on the study away (Giambo & Garrido, 2024b).

Limitations

Class discussions included considerations of limitations in information gathering and drawing reliable conclusions. Students were not of Zuni heritage and spent only eight days in Zuni. Despite student preparation and interest and the trip leaders' connections with community members, information shared could have been affected by limited trust of outsiders. Additionally, the number of community members with whom the group interacted was limited by time and opportunity. One semester was insufficient time to fully develop student skills to conduct inquiries, although structured support and instruction was implemented throughout; for most, this project was their first such experience. Additionally, although ongoing efforts were made to recognize the possibility of bias throughout project implementation, potentially biased interpretations could have affected the construction of inquiry questions, analysis, and responses.

Discussion

Inquiry question responses are grouped by topic under the following themes: (1) economy and government, (2) culture and language, (3) health, and (4) individuals with disabilities and elders. Citations presented below are included as they were cited by the student project authors, whose names are cited in each subheading.

Table 1.

Project themed groups

Theme	Project Titles and Authors
Economy and Government	Zuni Pueblo Economic Development (Cordova, 2019) Zuni Economy (Puri, 2019) Zuni Tribal Government and the Constitution (Silano, 2020)
Culture and Language	Parental Influence on Children in Zuni (Katzman, 2019) Education and Language Loss (Woliver, 2019) Passing on Traditions in the Zuni Culture (Donzanti, 2020) Leadership, Values, and Traditions (Gutierrez, 2020) Cultural Crisis in Zuni (Oliva Infante, 2019)
Community Health	Substance Abuse (Rico, 2019) and Effects (Sanjuan-Santiago, 2020) Mental Health in Zuni (Myers, 2020; Rodriguez, 2019) The Impact of the Opioid Epidemic (Joel, 2020) Effects of Religious, Lifestyle, and Educational Practices on Healthcare (Sciancalepore, 2020)
Individuals with Disabilities and Elders	Prevalence and Perception of Disabilities (Rodriguez, 2020) Functional Disabilities and Related Services (Hannon, 2020) Older Adults (Fishgold, 2020)

Economy and Government

Economic Development in the Zuni Pueblo (Cordova, 2019) and ***Zuni Economy*** (Puri, 2019)

Zuni's unique economy is supported, in large part, by artisans (Areavibes, 2019; Puri, 2019), and households are supported by contributions from various family members (Cordova, 2019; Reynis & Gillian, 2011). Approximately 80% of Zuni households are supported by income from traditional arts (e.g., jewelry, animal fetishes, Kachina dolls, or pottery; Areavibes, 2019). However, the 2019 median household income, including sums from multiple family members, was $30,250 (Cordova, 2019; Reynis & Gillian, 2011), which lagged behind the national average of $55,000 (Puri, 2019). Zuni also has a high unemployment rate, which was 153% higher than the national average in 2019 (Puri, 2019; Data USA, 2019). While many tribal governments choose to open casinos for tribal financial gain, Zuni tribal leaders intend to avoid this path (Cordova, 2019; "Economic Development," 2015).

Initiatives to support and integrate creative contributions to the economy provide a base for progress (Cordova, 2019). Creation of art shops to lower material costs and provide space for sellers to gather is centered in a project of the University of New Mexico's School of Architecture and Planning (Guzman-Barrera, 2015). Creating new artistic spaces for Zuni artisans off the reservation opens avenues for both income and maintaining cultural ties (Cordova, 2019; Gonzales, 2017). Additionally, New Mexico's MainStreet community program supports economic expansion through image development and social consciousness, including attracting investors in locally-based solutions, and Zuni was the first indigenous area with this designation (New Mexico MainStreet, 2019).

Cordova (2019) and Puri (2019) sought to learn more about the effects of the Zuni economy on the Zuni people and the ways in which the state government and other outside agencies have collaborated with Zuni tribal leaders on economic development. Regarding the effects of the Zuni economy, Puri (2019) found that tribal leaders are concerned about both the number of people qualified to fill professional positions in the Pueblo and unemployment. There is a need for and a lack of qualified people to fill jobs requiring higher levels of education, and the number of community members who take advantage of limited higher education opportunities and can contribute to the Pueblo professionally continues to be a concern. Connections were made between unemployment and social problems, such as substance abuse, domestic issue, higher rates of suicide, and low self-esteem. Additionally, observations revealed a small number of local businesses and no sign of upcoming businesses.

Cordova (2019), inquiring about collaborations, found that tribal leaders demonstrated openness to collaborations that also protected Zuni culture and discussed some opportunities. There was some sense of governor support for tribal needs along with an observation of state government interest at election time and, at other times, apathy in regard to Zuni well-being. In 2019, tribal leaders supported Zuni becoming the first indigenous location with a MainStreet relationship and shared a vision to grow local businesses. An openness to businesses that might fit the talents of the

Zuni people included needs for balanced affordability, cultural acceptance, and skill appropriateness. Tribal leaders prioritized the uniqueness of Zuni and cultural preservation over simple economic expansion. Tribal leaders were not open to casino options, acknowledging tribes with casinos gain financially at a cultural cost. Priorities indicated slow and sustained growth, deliberately chosen considering Zuni values over easier, faster solutions.

Zuni Tribal Government and the Constitution (Silano, 2020)

Silano (2020) focused on a deeper understanding of the Zuni tribal government and constitution framed through a comparison with the U.S. federal government and Constitution. Both Zuni tribal and federal governments encompass legislative, executive, and judicial branches, with the most striking difference in the judicial branch. The Zuni legislative branch, or Tribal Council, enforces tribal ordinances, as compared to the law-making responsibility of the U.S. Senate and House of Representatives. The Zuni executive branch includes the Governor, Lieutenant Governor, and Treasurer, who perform the responsibilities specified in the Zuni constitution, as compared to the U.S. President and Cabinet. The Zuni judicial branch includes the Chief Judge and two Associate Judges, with civil and limited criminal jurisdiction, compared to the U.S. Supreme Court and other federal courts. The Zuni judicial branch is seen as less important than the Governor, Lieutenant Governor, and the Tribal Council, while the three branches of the U.S. federal government hold equal importance. For example, a Zuni Tribal Court member receives appointment by the Governor, but the role is seen as less formal, and the court is overseen by the Tribal Council.

A comparison of the Zuni Constitution and U.S. Constitution reveal variation in focus (Silano, 2020). Principles of the Zuni constitution are to (1) encourage good citizenship, (2) exercise the right to self-government, (3) structure administration as a municipal body and manager of tribal affairs, (4) utilize, expand, and protect tribal resources, (5) focus efforts toward the general tribal welfare, (6) guarantee individual rights and religious freedom, and (7) maintain tribal traditions and customs. This varies from U.S. Constitution principles, which set forth popular sovereignty, republicanism (i.e., voting for representatives), and federalism (i.e., federal/state division of power), separation of powers, checks and balances, limited government, and individual rights. Recent revisions to the Zuni constitution signify independence as well as demonstrate the priority of tradition in Zuni. Revisions include (1) the use of traditional rhetoric in the oath of office and safeguard to a peaceful transition of authority in the Zuni government, (2) protection and preservation of cultural resources, and (3) the assurance that only the Zuni government can amend the constitution, without federal government consent, thereby further ensuring sovereignty and independence for the tribal government.

Culture, Religion, and Language

Parental Influence on Children *(Katzman, 2019),* ***Education and Language Loss*** *(Woliver, 2019), and* ***Passing on Traditions in the Zuni Culture*** *(Donzanti, 2020)*

Zuni religion is complex, encompasses issues of language, and for some, intersects with Catholicism and other Christian-based religions (Katzman, 2019). Zuni religious practices are conducted exclusively in the Zuni language. The Zuni language is at least 7,000 years old and is not linguistically related to other indigenous languages (Hill, 2008). Zuni prayers are specific in purpose and are directed to specific gods. For example, some prayers focus on the sun and fire, offerings to ancestors and loved ones, and preparation of offerings. Prayers are guarded and only shared selectively to maintain the prayers' power (Bunzel, 1758; Katzman, 2019).

Katzman's (2019) inquiry focused on (1) the connection between Zuni traditions and religion, (2) parents' role in passing on traditions and religion to their children, and (3) issues of language loss. Woliver (2019) focused on (1) Zuni religion and traditions in the classroom and (2) the grade level of the teaching of Zuni religion, tradition, and language in schools. Donzanti (2020) sought to understand how the arts are passed down to children in Zuni.

Since religious traditions and prayers are conducted exclusively in the Zuni language, participation in the religion is through the Zuni language only (Katzman, 2019). The gods look upon Zunis with favor when they speak in Zuni (Donzanti, 2020). Community members and tribal leaders expressed concern that language loss is connected to the risk of loss of Zuni traditions. Prayers are generally passed down orally, and although there is a prayer booklet, only certain families are permitted to have it in their possession. Fluency in the Zuni language is required for religious participation, and, conversely, language loss may result in the loss of religious traditions (Katzman, 2019).

Maintaining bilingualism requires persistence and is multifaceted. Many young families are not maintaining traditions, including speaking Zuni at home (Katzman, 2019). Some children with limited proficiency in Zuni experience bullying (Donzanti, 2020). Tribal leaders explained that the Zuni language is only spoken by Zunis, so language loss is significant and equates to loss of self. An elder, whose husband is Acoma, attributed language loss, in part, to inter-tribal marriages. In her case, English was spoken at home to facilitate communication. Another elder, who worked with middle school students, had observed difficulty with lessons due to limited English reading skills, and support with Zuni translations helped. Using both languages assisted the students' comprehension, as they may have had limited fluency in both languages (Donzanti, 2020).

Zuni schools support language maintenance from preschool through high school (Donzanti, 2020; Katzman, 2019; Woliver, 2019). Zuni's public schools' mission is empowerment of learners to develop knowledge and skills for global citizens and also includes a culturally relevant curriculum (Zuni Public School District, n.d.; Woliver, 2019). At Head Start, language is incorporated into meal time prayers and routines, and public-school announcements are presented in Zuni (Donzanti, 2020). There was some concern, however, about K–12 language program limitations and the need

for more scaffolding to develop higher levels of proficiency. Tribal leaders shared that there are programs for children as well as some for parents, since many parents also need improvement in their own Zuni language skills (Katzman, 2019).

The concept of lifelong learners seems consistent with the ways the Zuni religion and culture are passed down (Woliver, 2019). Zuni artistic traditions are valued, passed down from generation to generation, and taught in some schools to some extent (Donzanti, 2020). Traditional indigenous stories are passed down orally and typically in the family or in groups (Moore, 1996). Some community programs promote storytelling in the traditional manner (Zuni Youth Enrichment Project, 2020). With an oral tradition, a story and the associated history can be lost with the passing of the storyteller. The art of painting is also passed down from one generation to the next, and the tribal council is working with youth to paint murals for the tribal offices. Older members pass down dances and pottery-making to younger generations, and some school programs lend support. Jewelry-making, which supports the Zuni economy, is also passed down in families. The arts can be a favorable form of employment, especially given the lack of educational opportunities and transportation in Zuni (Donzanti, 2020).

Leadership, Values, and Traditions *(Gutierrez, 2020)*

Zuni artisans' efforts to maintain tradition and support families are exacerbated by many factors. High unemployment creates the need for multiple family members to contribute to a household (County, 2017). Pervasive international forgery efforts to replicate Zuni artisanry profit from lower sale prices. Geographical isolation and limited internet access require significant travel to sell artistic works outside of the Pueblo (Creative Startups, 2018). Artisans may benefit from some community economic programs to contend with difficulties.

Gutierrez (2020) wanted to learn how the Zuni maintain their traditions and how their strategies can be applied to modern businesses for longevity. She found evidence of current-day practices of maintenance of language and cultural traditions. Teaching the Zuni language starting in preschool as well as communication between community agencies and leadership regarding language loss and preservation efforts help to support language maintenance. Artisanry knowledge and skills are being passed down within families. Gutierrez concluded that the Zuni Pueblo is implementing strategies that, while effective in preserving values and traditions, may not be applicable to modern business practices, since being positioned for ongoing change is necessary. However, the priority of legacy-leaving (InterNations, 2018) can contribute to a business's definition of success. She concluded that a business can maintain core values in the absence of traditions, allowing the culture of a business to encompass beliefs.

Cultural Crisis in Zuni (*Oliva Infante, 2019****)***

Issues affecting Zuni cultural identity may connect to interactions with outsiders who lack understanding of the religion and culture. For example, the origin of the Zuni people and a familial relationship with animals, plants, and water tie them to the Grand Canyon and the Colorado and

Little Colorado Rivers, which hold religious significance. Related environmental problems, including tourism, power generation, excavation and mining, are troubling to the Zunis (Dongoske & Hays-Gilpin, 2016) and pose a threat to their culture. Requests to the Bureau of Reclamation to respect cultural practices are complex (Dongoske & Hays-Gilpin, 2016; Zuni Tribe, 2010, 2017). Additionally, federal agency decisions may not be representative of indigenous interests, relying on scientific reports to set policy. Conversely, indigenous groups may not rely on scientific, systematic, or bureaucratic methods to resolve issues (Dongoske et al., 1997).

Oliva Infante (2019) considered the strong cultural identity of the Zuni tribe throughout history and sought to learn about the reasons for what he viewed as a current-day Zuni "cultural crisis." He concluded that outside influences on culture and religion as well as language loss are putting Zuni in danger. Federal government actions can affect the Zuni religion and culture. The Zuni River, with its historical and religious significance, has disappeared. Dams north of Zuni dried the river, affecting the agrarian lifestyle, and restrictions to public access to some areas of the Grand Canyon prohibited Zuni access to religious sites. Tribal members eventually gained access through advocacy (Zuni Cultural Resource Enterprise, 2016). Yet water rights to the Zuni River remain unresolved. Additionally, the presence of Christian schools may bring a strong non-Zuni religious presence for youth when Zuni language loss is also prevalent. Many do not speak Zuni at home, and tribal leaders expressed deep concern about language loss. Zuni culture is based on oral tradition, and language loss means loss of oral traditions, stories, and religion. Without religion and culture, the Zuni community stands to lose its sense of identity with little hope of restoration.

Community Health

Substance Abuse *(Rico, 2019)* ***and Effects*** *(Sanjuan-Santiago, 2020)*

Elders refer to it as "black water," and for generations, Zuni leaders have expressed concerns and initiated prevention measures (Rico, 2019; Sanjuan-Santiago, 2020). Black water was reportedly introduced to Zuni from Anglo settlers and affected Zuni's core values (Chapman, 2016; Sanjuan-Santiago, 2020); however, it may also have come from Spanish explorers (Sanjuan-Santiago, 2020). According to ethnographer Matilda Coxe Stevenson, excessive use of black water was present during the most important yearly religious celebration in 1896 (Chapman, 2016; Rico, 2019; Sanjuan-Santiago, 2020). Addressing alcohol abuse has been a priority of Zuni leaders (Sanjuan-Santiago, 2020). Alcohol abuse is the leading cause of death, is connected with criminal offenses, and results in many health and social problems, including suicide, domestic violence, homicide, and sexual assault (Chapman, 2016; Rico, 2019). By the 1970s, the Zuni governor and tribal council expressed concerns about alcohol's threat to Zuni's future (Strivers, 1994; Sanjuan-Santiago, 2020), and candidates for Zuni governor in 2014 included alcohol abuse and prevention as part of their campaigns (Volkert, 2014; Sanjuan-Santiago, 2020). Addressing the issue, fines were imposed (Chapman, 2016; Rico, 2019; Sanjuan-Santiago, 2020), and the Zuni Teen Center was created as a possible alternative to substance use (Stivers, 1994).

Factors contributing to substance abuse are present along with efforts to address risk factors (Rico, 2019; Sanjuan-Santiago, 2020). Underemployment and poverty are significant contributors to substance abuse, and Zuni teenagers report turning to substances and engaging in high risk behaviors due to the lack of available activities (Sanjuan-Santiago, 2020; Stivers, 1994), and they have access to alcohol (Sanjuan-Santiago, 2020; Volkert, 2012). Changes in traditional extended-family housing have resulted in loss of cultural knowledge and beliefs among youth and have contributed to suicide risk factors (LaFromboise & Lewis, 2008; Rico, 2019). Concurrently, seeking help for substance-related illnesses carries a stigma and is affected by lack of awareness and transportation (Sanjuan-Santiago, 2020; Shah et al., 2014), yet the Zuni Life Skills Development Program attempts to address some risk factors with Zuni language and culture programs for youth (LaFromboise & Lewis, 2008; Rico, 2019). Protecting factors include family and social connectedness and spiritual practice (Rico, 2019; Substance Abuse and Mental Health Services Administration, 2015).

Rico (2019) and Sanjuan-Santiago (2020) focused on understanding alcohol and other substance abuse in Zuni. More specifically, they concentrated on (1) the prevalence of substance abuse in Zuni, (2) related factors and repercussions, and (3) community efforts. Investigating the historical and present-day access to alcohol, Sanjuan-Santiago (2020) found that community members acknowledged the roles of Anglo and, more so, Spanish settlers. Anglo settlers exchanged alcohol for hard labor or for traded goods. Over time, Anglo settlers intentionally put bars on each side of the reservation to draw people from Zuni, although there is only one nearby bar today.

Unemployment, cultural change, and trauma contribute to substance abuse and suicide (Rico, 2019; Sanjuan-Santiago, 2020). Zuni is located in the county with the highest unemployment rate in the state, and unemployment affects self-esteem and rates of domestic violence and substance abuse (Rico, 2019). Furthermore, alcohol abuse can cause disconnect with family and clan members as well as trauma to children (Sanjuan-Santiago, 2020), exacerbated by the decline of multigenerational housing and the resulting loss of culture, language, and familial support (Rico, 2019). A recent perception of fewer hospital admissions related to substance abuse, overall, was coupled with more admissions of younger people for overdose, domestic violence, and suicide. In-school observations were shared regarding frequent expressions of suicidal ideation among children, especially when exposed to parental alcohol abuse and family members' verbalization of suicidal thoughts (Rico, 2019). Alcohol is a way to cope with trauma, according to a tribal leader. Considering Zuni history and the trauma of witnessing their cultural destruction by Spanish and Anglo settlers, feelings of hate and depression have been passed down through generations (Sanjuan-Santiago, 2020). Additional trauma comes from loss of parents to alcoholism (Sanjuan-Santiago, 2020). In sum, economic difficulties, the loss of multigenerational housing, and transgenerational trauma seem to contribute to risk factors for substance abuse and suicide (Rico, 2019; Sanjuan-Santiago, 2020).

Tribal leaders and the community are working to find effective solutions. Programs at the Zuni Teen Wellness Center target prevention, substance abuse, suicide, and mental illness as well as promote self-awareness, healthy lifestyles, and independence (Rico, 2019). While it is illegal to

possess alcohol on the reservation, bootlegging and locations off of the reservations create accessibility (Rico, 2019), although bootlegging is perceived as having decreased (Sanjuan-Santiago, 2020). When caught, jail time, fines, and suggested counseling result. Active participation in religious and cultural practices seems to reduce substance use, and religious leaders can serve as role models for the community. Programs are in place, such as a domestic violence safe haven, social services, and a recovery center, and notices of alcohol abuse support programs and group therapy were observed at the Tribal Administration building. Additionally, strong Wellness Center programs help shift the focus to health. Interactions with Zuni members while on the trip contradict the literature and indicate dedicated ongoing efforts and resources to address substance abuse in Zuni (Sanjuan-Santiago, 2020).

Mental Health *(Rodriguez, 2019; Myers, 2020)*

Indian Health Service (IHS) provides just over half of the health care funding (Shah et al., 2014; Myers, 2020), and spends less than half per person than the national average (Friedman, 2016; Rodriguez, 2020). Per capita, funding for indigenous health care is approximately half the federal per capita funding for federal prisoners (Grandbois, 2005). Indigenous people in the United States suffer from more serious health problems than the general public, including higher rates of diabetes and liver disease (Friedman, 2016; Rodriguez, 2019), and sustain higher rates of substance abuse, post-traumatic stress disorder, depressive/anxiety disorders, and violence (i.e., domestic, child abuse, suicide, and homicide; Barnard, 2007; Rodriguez, 2019). Deaths due to mental and behavioral disorders are elevated among indigenous populations compared to the white population (Payne et al., 2018; Rodriguez, 2019), with suicide the eighth leading cause of death for indigenous people of all ages and the second leading cause among 10- to 24-year-olds (Suicide Prevention Resource Center, 2013). Additionally, indigenous people are underrepresented in mental health research and clinical trials (Grandbois, 2005; Myers, 2020).

Access to appropriate mental health treatment is a critical issue (Myers, 2020; Rodriguez, 2019) and is affected by poverty, geographical isolation, and lack of transportation, health insurance, and awareness (Mental Health America, 2019; Rodriguez, 2019), including awareness that mental health is not a result of physical illness (Myers, 2020; Shah et al., 2014). Issues of stigma, trust, and insufficient time for practitioner-client relationship-building were factors in care (Myers, 2020; Shah et al., 2014). Indigenous people are also far less likely to receive a diagnosis or treatment plan than Anglo patients (Myers, 2020; Joseph et al., 2019). Lack of culturally appropriate treatments contributes to not seeking treatment (Joseph et al., 2019). Additionally, historical trauma, such as unethical mental health treatment in the late nineteenth century, kidnapping of indigenous children for the military or Christian boarding schools, accompanied by spiritual, physical, sexual, and emotional abuse, and the lack of honor and enforcement of laws and treaties by the U.S. government can contribute to prolonged illnesses (Grandbois, 2005).

Indigenous people may hold diverse views on mental health and treatments (Myers, 2020; Rodriguez, 2019). Physical and psychological concerns are often not differentiated among indigenous people, and they can lead to emotional distress in ways that are inconsistent with

standard diagnostic categories (Mental Health America, 2019; Rodriguez, 2019). Mental illness may be seen as a form of supernatural possession, an imbalance and disharmony, or the expression of a special gift (Grandbois, 2005; Myers, 2020; Rodriguez, 2019). Those in need of treatment may rely on the security of their community (Rodriguez, 2019; Zinck & Marmion, 2011), and those with depression, anxiety, or substance abuse disorders may be more likely to seek help from a spiritual healer rather than medical professionals (American Psychiatric Association, 2010; Rodriguez, 2019). Successful treatments are culturally appropriate, including traditional medicinal practices and spiritual ceremonies, although these may have limited success in illnesses requiring pharmaceutical treatment (Grandbois, 2005; Myers, 2020).

Rodriguez's (2019) and Myers' (2020) inquiries focused on (1) the Zuni definition of mental health, (2) accessibility to care, (3) the extent to which resources are sufficient to meet needs, and (4) Zuni health-seeking behaviors. Rodriguez (2019) and Myers (2020) found that mental health perceptions in Zuni and access to resources and treatment contribute to treatment issues (Myers, 2020; Rodriguez, 2019). Zunis tend to view mental health as an imbalance within the body as well as a hopeless state or the terminal phase of an illness (Grandbois, 2005; Myers, 2020). There seems to be, however, general awareness of the existence of mental health issues. Of great concern is children's mental health stability evidenced by a few students per week expressing suicidal thoughts in school, which may be caused by exposure to inappropriate internet content or by observations of family members' mental instability due to poverty and resulting domestic or substance abuse. Furthermore, many students may have either one or both parents suffering from alcoholism (Rodriguez, 2019).

Rodriguez (2019) found that the Zuni community has access to mental health resources at the Teen Health Center, the Recovery Center and the Zuni Comprehensive Health Center, both four miles away in Black Rock, the Gallup Medical Center operated by the IHS in the closest city 36 miles away, and at home with a traditional healer. However, Myers (2020) found indications that mental health needs are not being addressed sufficiently. For example, the accessibility and abuse of substances and destruction of houses testing positive for methamphetamine residue may create cycles of homeless addicts in debt. Additionally, the absence of a long-term program to follow up on patients with psychiatric problems may result in reoccurrence. Services at the Teen Health Center, in part, include counseling and behavioral health services to a greater extent than the local hospital, which has a higher patient turnover, but they do so with limited resources that include one behavioral health specialist and a few nurses (Rodriguez, 2019). At the Zuni Comprehensive Community Health Center, there may be only one to two psychologists or psychiatrists who may be available solely via a telecommunications call, and the center website refers only to generalized and preventative treatments, indicating the possible lack of specific treatments (Myers, 2020). Programs for schools include age-appropriate substance abuse and mental health information, and community programs include mental health prevention and mental health first-aid training. At the Gallup Indian Medical Center, a half a dozen daily suicide attempts require safety attendants, although this is affected by understaffing, and access to one remotely available staff psychologist. Family dysfunction resulting in substance abuse may be the root cause. Zunis have a sacred and holistic view of medicine and often prefer treatment at home with a medicine man and their family

(Rodriguez, 2019). Awareness of need seems to be present among tribal and health leaders, yet access to treatment may be insufficient to meet the need (Myers, 2020; Rodriguez, 2019).

The Impact of the Opioid Epidemic *(Joel, 2020)*

The opioid epidemic resulted in 171 overdose deaths in New Mexico in 2017 (National Institute on Drug Abuse, 2019), and 5.2% of indigenous adults report misusing a prescription within the past year (Jones, 2018). From 1999 to 2008, indigenous populations used nonmedical prescription painkillers twice as frequently as Anglos and three times more frequently than Black populations (Patel, 2017). Additionally, indigenous people in the United States experienced the second highest opioid overdose rate in 2019, overall (Joseph et al., 2019). According to the National Institute on Drug Abuse (2019), from 2004 to 2014, there was a 324% increase in New Mexican children born addicted to opioids after mothers' misuse while pregnant and a 698% increase among U.S. indigenous people. The estimated cost of the opioid crisis in New Mexico in 2007 alone, according to the state health department, was $8.9 million, coupled with an inadequate budget for the IHS (New Mexico Attorney General, 2020). The literature does not provide the cost of the opioid crisis in Zuni specifically (Joel, 2020).

In 2017, the Department of Human Health outlined a five-step plan for opioid care, including supporting recovery, better public health data, alternative pain management, and opioid overdose reversal drug access (Jones, 2018). The department allocated $485 million to the Substance Abuse and Mental Health Services Administration to distribute money to states with indigenous populations struggling with substance abuse. However, monies were not distributed to the IHS or to tribal governments but to organizations supporting urban native populations (First Nations Community Healthsource Services, n.d.). The IHS launched a program at the Gallup Indian Medical Center that includes a support system for patients with opioid addition, and results from 2015–2016 indicate a 16% decrease in multiple prescriptions from different providers, a 7.2% decrease in overall prescriptions, and a 7% decrease in opioid overdoses (Patel, 2017). However, resources do not seem to be meeting needs directly in Zuni (Joel, 2020).

Joel (2020) sought to better understand the effects, if any, of the opioid crisis in Zuni, specifically (1) the prevalence of and attitudes toward the crisis and (2) economic, social, and cultural effects. Joel found some conflicting information. There is a perception that methamphetamine is more of a concern than opioids, and it is cheap, accessible, and made on the reservation. There may be less abuse of opioids, in part, due to access to medical and legal marijuana, which reduced abuse of some prescription drugs. However, according to a medical professional, the opioid crisis is prevalent in Zuni, and the organization of the health care system makes it nearly impossible to determine whether prescription requests result in misuse or distribution of the drug. The burden of monitoring is often placed on overworked pharmacists.

Joel (2020) noted the presence of opioid rehabilitation programs in the nearest city, Gallup (Patel, 2017), and concludes that opioid abuse may be present in Zuni, although it may be overshadowed by other substance abuse issues, such as methamphetamine production and use and alcoholism.

Joel recommends funding for research on the impact of the opioid crisis in Zuni, which may provide information on the effects on the community and the needs. Additionally, connections between the Zuni Wellness Center and the work of the National Committee on Heroin, Opioids and Pain in Gallup may be beneficial, along with public health education for children and teenagers, on the long-term effects of opiate addiction. Noting concern, lack of data, and the need for trust, Joel recommends an in-depth study by a researcher closely connected to the community.

Effects of Religious, Lifestyle, and Educational Practices on Healthcare *(Sciancalepore, 2020)*

The confluence of community and wellness can affect the adherence to healthy lifestyles (Sciancalepore, 2020). While challenges to patient empowerment can include limited resources and barriers of cultural, language, and health literacy, patient investment and accountability result in increased positive health results (Shah et al., 2015). Health education initiatives should consider how life events and religious and healing practices often include food, and educational initiatives should strategize to respect boundaries (Hodgins & Hodgins, 2013). Additionally, educational programs which rely on governmental food subsidies that include chemical and filler ingredients can affect health.

Sciancalepore (2020) focused on questions regarding practicality and success factors of IHS programs, effective health education, and effective outreach within the context of poverty. Answers to her questions emerged in themes that included governmental health programs, community and wellness, and health education for youth. Sciancalepore found that services provided by the IHS seem to be valued but may be underutilized. Potentially, a lack of patient accountability for health follow-up and one-on-one assistance to promote patient responsibility may affect underutilization of IHS services, which are considered by many as vital to community well-being. Programs include diabetes prevention and research into kidney diseases that can form as a result of alcoholism, issues prevalent in Zuni. Such programs may be valuable to the community, since they address community needs, but they may be more effective with increased education and patient empowerment, support, and accountability (Sciancalepore, 2020).

While research typically targets adults, some effective community programs target youth. Programs at the Zuni Youth Enrichment Project, which target health education for youth regarding healthy, culturally-based habits, the harmful nature of diseases, such as diabetes and alcoholism, youth empowerment, and cultural enrichment (Zuni Youth Enrichment Project, 2020) seem to be perceived as the most successful. These year-round K–12 programs, funded at least in part by donations, utilize outdoor activities focused on culture and history. Additionally, Zuni Youth Enrichment Project's pre- and post-program analysis of effects indicate changes in attitudes, soda consumption, and physical fitness in some programs (Zuni Youth Enrichment Project, 2020). Rebranding of free holistic physical activities in the community, such as the trail system, wellness center, and community basketball, may also be a way to address exercise for lower income families (Sciancalepore, 2020).

Individuals with Disabilities and Elders

Prevalence and Perception of Disabilities (Rodriguez, 2020)

While there is a lack of demographic information regarding individuals in Zuni with disabilities, some sources suggest the number could be significant. In general, among U.S. indigenous populations, 17.4% have a disability compared to 12.7% among the general population (Yang & Tan, 2018). Diabetes is a prevalent, debilitating disease in Zuni, and in one study, 64% of Zuni participants reported having a diabetes diagnosis compared to the 10.5% nationwide (Newman et al., 2014). Over 4% of U.S. indigenous people with diabetes had a lower-extremity amputation within eight years of diagnoses (Resnick et al., 2004). Among Zuni elders, 40% reported limitations bathing and 31% with walking while only 6% self-rated their health status as poor (Moss et al., 2004). There remains, however, a lack of disability information specific to the Zuni population (Rodriguez, 2020).

People with disabilities living on tribal lands may experience some extra challenges with accessibility and inclusion. Tribal governments are not required to comply with the federal Americans with Disabilities Act accessibility laws, although tribal groups have been open to creating more inclusivity and accessibility (Fowler et al., 1996). According to the Zuni IHS website, the hospital provides important services, such as diabetes screening, mental health, and outpatient services, but occupational therapy for those with disabilities is not mentioned (IHS, n.d.).

Indigenous perceptions of disability can differ greatly from that within mainstream U.S. culture (Rodriguez, 2020). Individuals with a disability in indigenous cultures are "heralded members of the community" whose "gift of difference challenges and energizes," and many indigenous languages do not have a word for "handicap" or "cripple" (Leib-Neri, 2015). Zuni dictionaries (Cook, 1974; Newman, 1958) provide no word for "disabled" or "disability," although informally terms may be used (Rodriguez, 2020). In Navajo, it would take "a page and a half of words . . . to capture the meaning of this one English word" (Fowler et al., 1996, p.5). Indigenous beliefs, rooted in an idea of "ever changing reality" (Leib-Neri, 2015), can lead to the lack of a concept of normal. Conversely, lack of a concept of abnormal may relate to the lack of words for "disability" (Fowler et al., 1996). Additionally, the Zuni tribe is familial based, which implies a great respect for their elders (Crampton, 1977) and suggests a respect even for those who acquire disabilities through old age (Rodriguez, 2020).

Rodriguez (2020) sought a deeper understanding of (1) the prevalence of disability in Zuni, (2) services in Zuni for those with a disability, and (3) social expectations, stereotypes, or perceptions in Zuni culture for individuals with disabilities. In addition to interactions with tribal leaders, educators, health care professionals, and Zuni scientific, cultural, and artistic professionals, Rodriguez observed physical layouts, including accessibility (e.g., ramps, handrails, accessible doorknobs, elevators, walkways). Determining the prevalence of disabilities in Zuni presented a challenge, although some services are available. Without a census or other record of individuals

with a disability, there is a sense that Zuni may be similar to any other city or town, although a health care professional noted many amputees (occupational therapist, personal communication, March 5, 2019). Services are present in educational settings and at the Senior Center. In a school, students were observed receiving occupational therapy to improve strength and coordination. Children at Head Start receive occupational, physical, and speech therapies, and public school students with disabilities receive services to meet goals in their Individualized Education Programs. For elders with disabilities, the Senior Center provides accessibility with bus transportation to and from the center and meal delivery to homes. However, most buildings lack ramps, and many sidewalks are rough, when available (Rodriguez, 2020).

Zuni community members are accepting of individuals with disabilities, as indicated by language, interactions, and recognition of contributions. Confirmation was provided that the Zuni language does not include a word for "disability" or "disabled" (Zuni community member, personal communication, March 4, 2020). When needed, the disability is simply described; For example, a man in a wheelchair may be described as "no longer having use of legs." In the public schools, while there are special education classes, students are placed in general education classes when possible and are accepted by classmates. Many individuals with disabilities are contributing members of the tribe, running businesses and participating in cultural events, including a silversmith who is a paraplegic, a business owner with a physical difference impacting his fingers, a successful potter who is paralyzed at the legs, an artist who is a leader of his religious kiva group despite having no fingers on one hand. Many indications pointed to the inclusion of community members with disabilities in Zuni (Rodriguez, 2020; Zuni community members, personal communications, March 4–8, 2020).

Various Zuni community members shared that individuals are not judged on any disability. A Zuni leader stated, "We try to make a place for [individuals with disabilities] because we don't know what their place is . . . . The Creator gave you your gifts. Who are we to try and determine what they are?" Another commented, "If you're picked with a good heart, it doesn't matter what you look like." Students stated, "Everyone is different, [and] that's ok." An artist textures his work, so those who are blind can experience the image, and shared, "We are all brothers and sisters." Previous literature considering other U.S. indigenous tribes suggests that individuals with disabilities do not face discrimination and hold importance within the community (Fowler et al., 1996; Leib-Neri, 2015), as was apparent in Zuni. Belonging seemed to be common in Zuni, despite limited resources to create physical accessibility.

Functional Disabilities and Related Services *(Hannon, 2020)*

Many indigenous groups view people with disabilities as contributing their gift of a different reality, and they provide challenge and energy for the rest of the community; they "evoked the magic of chaos" (Fowler et al., 1996). People with disabilities, sometimes seen as teachers with extreme behaviors that mirrored those of others, lead others to self-examination of doubts, fears, hatred, and weakness. They help others find answers from within (Fowler et al., 1996). Disability is considered only one element and not the element that defines the individual, supported by

indigenous concepts related to wellness, which are holistic and recognize the interconnectedness of every aspect of an individual's reality with nature, community, the spirits, and the elements (Leib-Neri, 2015). Disability, therefore, is a difference that can be integrated into the community (Hannon, 2020).

Culturally-based health care and lifestyle in Zuni create both connections and challenges. With large extended families and deep cultural expectations for family members to provide care, their remote location and limited access to providers can be challenging (Fowler et al., 1996). Prevalence of chronic diseases, such as diabetes, obesity, and arthritis (Moss et al., 2004), are often accompanied by low health care utilization due to transportation issues and non-native providers (Shah et al., 2014). The active and tenuous lifestyle of the Zuni people, including chopping wood to heat houses and ovens, using outhouses or bathrooms in buildings made from ancient adobe, which do not allow for installation of bathroom grab bars, and walking long distances on uneven, dirt roads, may contribute to early onset of functional disabilities (Moss, 2004). With high unemployment in Zuni, finding employment is more difficult for people with disabilities. The Pueblo has responded with several consumer-owned businesses and a transportation program to support employment for people with disabilities (National Council on Disabilities, 2003).

Noting significant gaps in the literature, Hannon (2020) sought to better understand (1) the services available for Zuni members with functional disabilities and (2) the implementation of culturally sensitive occupational therapy for those with functional disabilities in the Zuni Pueblo. Hannon (2020) found that services were provided to young children, and transportation was also available to older children and adults to access services. The Zuni Head Start program provided a special needs classroom run separately by the Zuni Public School District, with services including occupational, speech, and physical therapies. Additionally, at the time of her visit, there was a plan for an applied behavioral analyst (ABA) to visit to train special-needs teachers on ABA therapy for classroom implementation. For individuals needing to go off the reservation for services, the Pueblo has provided transportation services to medical appointments since 2009.

A variety of services are offered in Zuni for individuals with disabilities that affect everyday living. Occupational therapy provided in an early childhood school setting by a non-indigenous therapist seemed to be typical and effective although not necessarily specifically geared toward Zuni children. As compared to outside of Zuni, therapists appreciated the gratitude received from clients as well as the inclusiveness and good care of children with autism spectrum disorder and Down syndrome. In general, attitudes and behaviors seem to indicate inclusiveness of individuals with disabilities, yet there is some indication that some parents may resist testing for children for cognitive disabilities by non-indigenous professionals, and Hannon (2020) notes that different cultural beliefs can affect interactions between therapists and families (Head Start staff member, personal communication, March 5, 2020). Hannon (2020) concludes that the conversation regarding disability in indigenous groups is complex and multidimensional and requires health care professionals and community members with disabilities to work together to create a comprehensive plan. She posits that occupational therapy and other special education providers

who are born and raised in Zuni may create a more comprehensive therapeutic experience for clients.

Older Adults *(Fishgold, 2020)*

Zuni elders face adaptation to change throughout their lives, and effectively addressing elder needs necessitates special consideration to avoid alienation (Fishgold, 2020). Historically, Zuni elders have faced the challenge of almost constant lifelong change as Zuni adapted to modern industrialization (Rogers & Gallion, 1978). While most people spoke Zuni at home traditionally (Dicharry, 1986), Zuni and English are now commonly spoken among Zuni elders (Moss, 2008), yet elder health care necessitates consideration of language barriers (Rogers & Gallion, 1978). Providing home health care to Zuni elders involves treating the patient and also assisting the family with lifestyle modifications to accommodate their elder (Dicharry, 1986). While approximately 93% of Zuni elders have a disability, equivalent to other U.S. indigenous groups, there are limited services (Moss et al., 2004). Despite positive perceptions in Zuni of people with disabilities (Moss, 2006), Zunis with disabilities have reported feeling restricted and distant from their physically and mentally well families (Dicharry,1986).

Elder services in Zuni are available, although resources are limited (Fishgold, 2020). Zuni elders may not have access to needed services (Moss et al., 2004), potentially affected by historical lack of relevant data (Rogers & Gallion, 1978). Hospital access is in neighboring Black Rock (Dicharry, 1986), and the Zuni Senior Center provides services (State of New Mexico, n.d.).

Fishgold (2020) sought to better understand life for Zuni elders, including transition to older adulthood, possible barriers to services, and the effects of being elderly on daily life. She found some inconsistencies when compared with the sparse literature. Fishgold (2020) found challenges in transitioning to older adulthood for Zuni elders, although some quality services are provided. Barriers to services include a local lack of gerontological health professionals and only one medical specialist in Alzheimer's disease, within a struggling economy. However, the Senior Center provides quality food and activities. Information about the effects of being elderly on daily life was somewhat limited, and more research is needed to better understand the needs and, potentially, access more funding.

Discussion and Conclusions

Answers to students' questions indicated that, while the Zuni Pueblo faces significant social, health, cultural, linguistic, economic, disability, and elder-related service challenges, the community and tribal leadership work with careful intention, long-term vision, and passioned advocacy to ameliorate these and related issues for the benefit and maintenance of the centuries-old culture, religion, language, artisanry, and traditions. The students' findings, with acknowledged inherent limitations, can contribute to the literature on the Zuni Pueblo, especially with attention to the current-day issues the community faces. Recommendations made by and

stemming from student work may help to inform researchers of needs to build the knowledge base, support the community, and provide data to obtain much-needed funding.

Culture and Language

1. Expressed values indicate that economic growth in Zuni should (1) balance affordability, acceptance of Zuni culture, and skills found in the community, and (2) prioritize cultural preservation over faster economic expansion. Businesses can maintain core values and promote a business culture that encompasses beliefs (Gutierrez, 2020).
2. Constitutional provisions support protection and preservation of cultural resources as well as ensure tribal government sovereignty (Silano, 2020).
3. To maintain and promote fluency in the Zuni language, scaffolded language programs can support development of higher levels of proficiency, and continued programs for children and parents can support language development and maintenance in the home and community (Katzman, 2019; Woliver, 2019). To support traditional passing down of Zuni cultural traditions, continued school and community programs can supplement home-based practices, and these efforts can support self-employment in traditional arts (Donzanti, 2020).
4. Continued advocacy on water rights to restore the Zuni River as well as continued Zuni language programs can support the preservation and continuation of the Zuni culture, including religious traditions (Oliva Infante, 2019).

Community Health

1. Continued efforts to enforce alcohol possession laws, supported by counseling, as well as promotion of participation in religious and cultural practices and wellness programs may reduce substance abuse (Rico, 2019; Sanjuan-Santiago, 2020). The presence of opioids may be overshadowed by other substance abuse, and systematic monitoring and funding for research is needed. Collaboration with the National Committee on Heroin, Opioids and Pain in Gallup may be beneficial as well as continued public health education for youth (Joel, 2020).
2. Mental health services are a priority in the community, and dedication of more resources, supported by the federal government, may more effectively address the need. Care that includes attention to traditional practices and cultural traditions may best support patients (Myers, 2020; Rodriquez, 2019).
3. Support for individual patients to follow-up on health issues may help support health maintenance, and programs that target illnesses prevalent in Zuni can address community needs. Physical activities that are free and culturally connected can promote and support community health (Sciancalepore, 2020).

Individuals with Disabilities and Older Adults

1. Accepting and inclusive views of individuals with disabilities are prevalent in Zuni culture and community, and multi-level programs are provided and can be supported by more physical access (e.g., ramps and accessible sidewalks; Rodriguez, 2020).

2. Collaboration between health care professionals from Zuni or with deep knowledge of the community, culture, and community members with disabilities may result in effective, comprehensive service plans (Hannon, 2020).
3. Quality services are available for older adults in Zuni, and more gerontological health professionals are needed as well as more research focused on older adults and their caregivers (Fishgold, 2020).

Scholarly inquiry projects can support students' transformative learning (Giambo & Garrido, 2024a), as they can connect students' chosen field of study or intended career path to course topics, interactions, and information gathering while in Zuni and also support students' motivation to engage in analysis and interpretation. Such projects, with an intercultural foundation, can add a global dimension to the inquiry project experience and may have enhanced students' transformative learning experience (Warren, 2019). Within a few years after the experience, former students recognized the uniqueness of the project experience and its contributions to their graduate school and job applications as well as their interactions in graduate-level classrooms and public-school classrooms (Giambo & Garrido, 2024a). Such scholarly work can support scholarly skills growth, can affect students' professional futures, and can contribute to limited literature in the field regarding current-day solutions in a traditional community working toward cultural preservation and continuance in a complex and changing world.

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