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The Great Texas Deaf Ed Road Trip:

Middle Schoolers Drive Development of Virtual Learning

By Sarah Wainscott and William Wainscott

During a morning lesson with seventh graders, Bill Wainscott, teacher and co-author of this article, has an outline of Texas, segmented into regions, posted on his SMART Board®. He asks students for any cities they can name in our state. Quickly, they list their hometown of Denton and nearby Dallas, though none of the six students can connect either city to the North Texas region in which they live. When pressed to name other cities in Texas, one student fingerspells "A-t-l-a-n-t-a" and another says, "Oklahoma." Wainscott reviews the differences between cities and states, noting that Atlanta—and the Braves baseball team!—is actually in the state of Georgia. He reminds the students of a fourth-grade field trip to Fort Worth and locates it on the map, showing its proximity to our school. When he asks how long they think it would take to drive the 30 miles to Fort Worth, student estimates range from 10 minutes to three hours.

Like too many deaf and hard of hearing students, Bill's students lack simple state geography concepts. They have little sense of the historical, economic, and cultural influences that shape their state, and they are missing background knowledge that is needed to engage in grade-level curriculum concepts. One of the solutions: A Texas Deaf Ed Road Trip.

A Classroom Journey

Of course, it is not practical to pack up a van with deaf and hard of hearing teens and pre-teens, so Bill, with his wife and co-author Sarah Wainscott, who trains students in speech pathology and deaf education at Texas Woman's University, devised the next best thing. We developed an online, digital field trip that allows students to virtually

Photos courtesy of Sarah Wainscott and Bill Wainscott



Left: In addition to important sites of history, culture, and industry, “hooks” are included to draw student interest, such as the first Whataburger restaurant in Corpus Christi.

visit cities throughout Texas—all while improving their knowledge of geography, history, and culture within their state and remaining in their classroom.

Each digital visit includes short, teacher-created videos presented in sign language and speech using straightforward language with age-appropriate concepts tied to a central theme. The students progress through Sway, free software that allows presentations of material similar to PowerPoint but easily accessed online and synced with SMART Boards or other technologies to facilitate interactive lessons. The lessons can be used in the deaf education classroom or pushed out through a learning management system for students to explore independently.

We targeted deaf and hard of hearing students in grades 6-8 who are enrolled in the 54 regional day school programs in Texas. Each program serves students in varied placements, many of which are self-contained deaf education classrooms. Inspired by our own history of road trips and propelled by a long season of navigating instruction through the season of

COVID-19, we—Sarah and Bill—spent a summer (plus a few weekends) traversing more than 4,000 miles across the Lone Star State on our own personal budget, all the while curating a collection of video-based mini-lessons to create a flexible and sharable instructional tool. The result, the Texas Deaf Ed Road Trip, is an Open Educational Resource (OER), teaching material available that can be freely used, changed, or shared. Sway allows for continuous development of the material, welcoming contributions of teachers and students across the state. It is student-centered, adaptable, accessible, and, of course, deaf-friendly. A shared innovation and adventure, the Texas Deaf Ed Road Trip allowed us to bring the state’s history, culture, economics, and geography to not only our students but to students in deaf education programs throughout Texas.

As the video begins and we start to explore a city for the first time, our students are excited to see their teacher projected on the SMART Board. They get hints to help them guess the name of the city. Hints in a recent showing included: *It has a large zoo ... money is printed here ... its nickname is Cowntown*

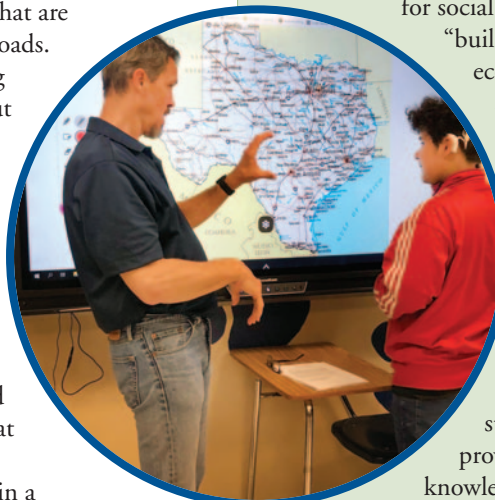


Above: Students who have had a vague awareness of a location are excited to build real understanding and make new connections through the videos with comprehensible and accessible language. **Below:** Locating a city on an interactive SMART Board map and identifying relationships and distances from other cities builds knowledge of state geography.

... and its sign is F-W on an outward palm. Students responded quickly. Some recognized Fort Worth and said they had been there. As the video progressed, they initiated discussions. For example, when a video displayed Fort Worth's legendary stockyards, a student asked about the differences between cows, longhorns, and bulls in terms of size and physical features. Another student referred to the stockyard as a "ranch," and Bill explained that stockyards are not ranches but holding areas for thousands of cattle that are moved out of Texas every year by the railroads.

Watching a re-enactment of cattle being driven through town, students asked about the costumes of the cowboys. Bill reminded students that re-enactments are not real; the cowboys are actors, and the longhorns on the screen represent the cattle drives of long ago. Then Bill quickly reviewed the concept of tradition, showed a video about the Cowtown Coliseum, and described rodeo events. None of the students had attended a rodeo, and they were excited to learn that rodeos are "cheaper than Six Flags."

The students were especially interested in a rodeo rider who was Black and deaf. This called for investigation, and while details were difficult to find, the students did find a photo online. Next on the video was a Fort Worth barbeque and most students approved of Bill's choice, though one student recommended chicken nuggets next time. At the end of the sequence, the students were excited to see Bill mount a mechanical bull. He reminded them that to be



Steps in Resource Design: Mapping a Deaf Ed Road Trip

By Sarah Wainscott and William Wainscott

As we designed the virtual Texas Deaf Ed Road Trip, we—like all good voyagers—proceeded one step at a time. The following are suggestions for forging a path to resource development based on our experience:

- **Recognize a shift in instruction.** SMART Boards, video content, and online modules are established instructional tools, but expectations shifted significantly in the response to COVID-19 and the resultant student fatigue. Teachers and students need tools that support learning online, in the classroom, and at home which can also be used for engaging face-to-face instruction.
- **Keep it relevant.** We found that contributions and viewpoints of deaf and hard of hearing individuals added value to our instruction. With these connections inserted into each stop, students quickly experienced an answer to the question, "Why is this important to me?"
- **Identify a need.** The Texas Essential Knowledge and Skills for social studies expects middle school students to "build a foundation in history, geography, economics, government, citizenship, culture, science, technology" (Texas Education Agency, 2021). Our aim was to "backfill" information that had been missed either because students had not absorbed knowledge that their hearing peers gained incidentally or because instruction had not been delivered in a manner that allowed information to be processed and retained. Further, we believe a shared understanding of one's state contributes to good citizenship, provides culturally relevant background knowledge, and builds a sense of group identity.
- **Incorporate accessible language.** Often print-based and even captioned grade-level instructional materials are above the reading level of most students in self-contained classrooms. Wanting to ensure the content was accessible, we developed short, video-based lessons presented in a

conversational style by a deaf educator/interpreter. We used conceptually accurate signing. Delivery was carefully paced, with new vocabulary deliberately introduced and clearly fingerspelled. Captioning was included.

- **Leverage relationships.** Together, we have raised three hearing and two deaf children, and we speak regularly to parents and caregivers on practical topics of supporting language in the midst of busy family life. We also have very different perspectives and skills. Bill, as a certified interpreter and teacher, has strong ties to visual language and the classroom. Sarah, as an audiologist and university faculty member, is closely connected to spoken language and curriculum. We share a love for travel, and our family trips include what teachers recognize as pre-teaching and teaching materials. We made the decision to commit one summer to virtually “bringing along” students with our family through a series of documented educational road trips across the state and package presentations in a format that could complement the curriculum.
- **Consider OERs.** Traditional materials are restrictive in terms of copyright, use restrictions, costs, and accessibility. OERs, however, are used, shared, and modified freely. An OER may be a single video or lesson plan or even a complete online course. Increasingly used in higher education to reduce student costs and tailor materials to specific courses, they have expanded recently to K-12 as well (OER Commons, n.d.). We chose Sway, a user-friendly digital storytelling app free to Microsoft users, that allowed us to create quality materials without the expertise or expense of outside technical support.
- **Enact the plan.** We hit the road with themes—science, art, government, cattle, energy, agriculture—and an iPhone. We headed for cities we had identified as the most populated in Texas as well as cities representing each region of our large state. Additionally, each of the stops had a connection to either a deaf or hard of hearing individual or a concept related to deaf or hard of hearing people (e.g., In Waco, we discussed the lost language of the Waco Indians and preserving the richness of American Sign Language (ASL); in Austin, we discussed the varied forms of Deaf leadership).
- **Put the project together.** We generated an interactive

Texas Deaf Ed Road Trip with links to the 15 destinations. Each lesson is designed to be delivered by the teacher in a 20- to 30-minute session. A single Sway link connects each visit, and the lessons for each city are organized in a predictable way, making the resource flexible and easy to use for the teacher as well as engaging for the students. Beginning with *Guess Which City I’m In!*, each video presents students with three hints about the city, the sign name of the city, and finally the name (fingerspelled, spoken, and shown in print on city signage). Students identify the city and its region on a virtual Texas Highways map. They visit various sites through language-rich videos that introduce concepts and vocabulary while showcasing a myriad of the state’s interesting features. Resources embedded in the Sway presentation accompany each lesson, including websites of sites visited, writing prompts for various levels, and simple mini-lessons that classroom teachers can use to expand on concepts.

- **Pilot the project.** The Texas Deaf Ed Road Trip went live this year, piloted in Bill’s class. Bill was excited to see students engage with and make personal connections to the content.

References

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Resources

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The Great and Virtual Texas Deaf Ed Road Trip

By Sarah Wainscott and William Wainscott

The following chart provides a quick look at where we took students on our virtual Texas road trip. It shows the theme we chose and what we filmed to support an understanding of Texas history and culture as well as the Deaf connections to each city, which garnered the most student response.

scored he had to stay on the bull for eight seconds, and they enthusiastically counted to eight as they watched the video in which Bill rode the “bull” with one hand in the air.

When the road trip ventured to Houston, a student whose father works for NASA was excited to see the space center. When we arrived in El Paso, another student was proud when his Mexican American heritage was featured in the cultural center. Students, drawn in by the lessons, were increasingly able to converse about current events, such as recent supply chain issues and how they are affecting Texas ports and bridges, or comparing the benefits of renewable energy to fossil fuels. Students at varied levels used new vocabulary (e.g., *tourist*, *port*, *military*, *tradition*) in their communication and writing, several carefully using fingerspelling to be more specific (*c-a-t-t-l-e*, not *c-o-w-s*). When news stories mention the advent of major storms or where Texas sports teams are playing, they now recognize the locations. Students were also amused by fun facts, for example, where the first Whataburger was eaten and the location and age of the oldest mammoth fossils in Texas. However, the most excitement came from Deaf connections—and these abound in Texas. When we visited Brownsville, we discussed Alma Schrage, the hard of hearing scientist who studied bird songs using a spectrogram on her smartphone. In Galveston, the star was Leroy Columbo, the heroic Deaf lifeguard who saved hundreds from drowning in the waters off the coast. Then, of course, we have a whole county named Deaf Smith, after the famous spy of the Texas revolution.

At the end of each lesson, students retell what they learned. As the school year ended, they created their own road trip, focusing on their community in Denton, identifying its notable features and its contributions to the state. Their visit will be the last one added before the project is presented in July 2022 at the Statewide Conference for Education of the Deaf.

From that first road trip to Fort Worth, we were pleased with our students’ response. After the students re-told the story of the trip—recalling information about c-a-t-t-l-e drives, bull riding, and barbeque, a young girl presented a final question: “Mr. Wainscott,” she asked, “tomorrow, Austin?”

Looking Back Developing a Resource

Through developing our Texas Deaf Ed Road Trip, we used many of the practices we want to cultivate in our students: trying something new, taking risks, sharing resources, and enjoying learning. We discovered only a few materials that were accessible for our students. For example, the most widely used online repository for K-12 materials, OER Commons, with more than 50,000 high-quality items cataloged and available for free, offers only a handful of instructional materials designed for students who are deaf or hard of hearing. This includes about 200 materials for teaching ASL, which are designed mostly for hearing students. Certainly, captioning is typically included, and items could be adapted by deaf

educators; still, the gross inequity remains. Our challenge is this:

- **To catalog and centralize materials:** The Texas School for the Deaf, for example, has lesson plans available through the State Outreach Center that cover issues such as tutorials on basic math, a book study on the novel *Wonderstruck*, and a lesson on coding. Bringing these materials together from across programs and locations and cataloging them in a national online repository would equip teachers with a rich instructional resource.
- **To create and share more OERs:** Many teachers, particularly with the COVID-19 pandemic as a catalyst, have created excellent digital materials for their students that other teachers would benefit from using. Collaborating across programs is a great way to increase resources for everyone. Teacher-created items can be classified as OER and added to an online repository in a few simple steps listed under “Create a resource with Open Author” on the OER Commons website.
- **To recognize the varied ways that students who are deaf or hard of hearing access language.** In creating accessible materials for our students, we found that simply providing instruction by adding captions or ASL did not make the content comprehensible. Mediating the content, providing multiple modes of language, intentionally teaching vocabulary, and providing visual demonstrations strengthened any digital material produced for students who are deaf or hard of hearing.

We hope that deaf and hard of hearing students, parents, caregivers, and teachers will drive in person to places we visited virtually and help students own their learning in new ways. Meanwhile, we invite teachers and students from around the country to click into our Sway (<https://sway.office.com/HiGo62VN7tbUtY32?ref=email>) and join our road trip in Texas—and to feel free to add their own destinations, perspectives, and digital comments!

CITY STOP	VIDEO VISITS	DEAF CONNECTION VIDEOS
Fort Worth A city with cowboy traditions	Cattle drive, stockyards, rodeo, BBQ, mechanical bull	Deaf rodeo champions
Tyler A city where good things grow	Blueberry farm, Municipal Rose Garden, pecan orchard, Tyler Junior College	Interpreter training program
Corpus Christi A city with lots of tourists	USS Lexington, Texas State Aquarium, city seawall, Mustang Island Beach	Accommodation/captions and "signing" with dolphins
Brownsville A city with lots of wildlife around	World Birding Center, Pollinator Cantina, wildlife refuge, produce stand	Alma Schrage (hard of hearing ornithologist)
Waco A city next to a river	Waco Mammoth Monument, monument to Waco Indians, suspension bridge, Lake Waco Dam	Lost language and assimilation of Waco Indians (parallels to ASL)
Austin A city with important leaders	Capitol building, Texas School for the Deaf, Crepe Crazy, food bank	Deaf-friendly laws, Texas School for the Deaf, Deaf business
Dallas A city full of art	Dallas Museum of Art, Klyde Warren Park, Fair Park, Deep Ellum murals	Deaf artists
Amarillo A city where they raise cattle	Big Texan Steak Ranch, Hall Cattle Ranch, WTAMU Meat Lab, Palo Duro Canyon, Goodnight home	Deaf Smith Courthouse
San Antonio A city with lots of soldiers	Spanish presidio, Six Flags of Texas, Alamo, Fort Sam Houston, Veterans Memorial	Sunshine Cottage School for Deaf Children
Galveston A city with a seaport	Cargo ship port, cruise ship port, shrimp boat, oil rig, hurricane memorial	Leroy Columbo (Deaf lifeguard)
Houston A city that makes scientific discoveries	George Observatory, Johnson Space Center, hospital center, rail system, museum district	Gallaudet Eleven (NASA's Human Spaceflight Program)
Arlington A city that has lots of sports	Globe Life Field, AT&T Stadium, Dallas Wings, bowling center	Deaf athletes (Hoy, Catchings, Coleman)
El Paso A city that has a Mexican border	Ysleta Mission, Good Neighbor Bridge, community market, cultural center	Deaf Hispanic community
Midland/Odessa A pair of cities that have oil wells	Petroleum museum, oil field, gas station, wind farm, solar farm	Douglas Burke and the South West Collegiate Institute for the Deaf
Big Bend National Park No city at all on the edge of Texas	Rio Grande, visitor center, campground, Chisos Mountains, Chihuahuan Desert	Deaf park ranger