

THE INTERCONNECTION BETWEEN EDUCATION, ECONOMICS & THE DIGITAL DIVIDE IN UPPER EAST TEXAS

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INTRODUCTION

The Texas Comptroller, in its Texas Broadband Plan, defines the digital divide as: *the gap between those who have access to broadband and those who do not*¹. The digital divide is commonly characterized as lacking access to computers and the internet, vital components of our advanced society. The world wide web connects nearly the entire globe to information, people, and experiences. For many, it is vital to the shaping of the human experience—our lives are interwoven by this metaphorical web.

For this brief and the policy recommendations that follow, the digital divide will be referred to as the broader digital divide and characterized by the gaps in progress between those who have access to the internet and computers and the loss of income potential, career opportunities, and quality of life resulting from lack of access.

Texas has experienced significant gains that have allowed it to be competitive in the tech industry. Alongside major cities like Austin, which has a reputation for being tech-savvy, are smaller towns that can make a name in the technology industry. Much of this depends on their ability to tackle problems such as the digital divide.

ZOOMING INTO LONGVIEW

Longview and Tyler, Texas, are major cities that contribute to the makeup of the East Texas region. Though this region is often categorized as rural, neither Longview nor Tyler meet that definition. According to the United States Department of Agriculture, rural is defined as a population of less than 2,500. At the same time, urban is described as a densely populated area of 50,000 or more people and is not dictated by municipality² lines. Both cities have populations greater than 2,500, surpassing even the 50,000-population mark. Tyler has a population of 107,192 as of 2021, which is double the amount to be indicated as Urban, and Longview comes in at almost 82,000, which is not far behind from its near neighbor. These are urban cities with rural problems.

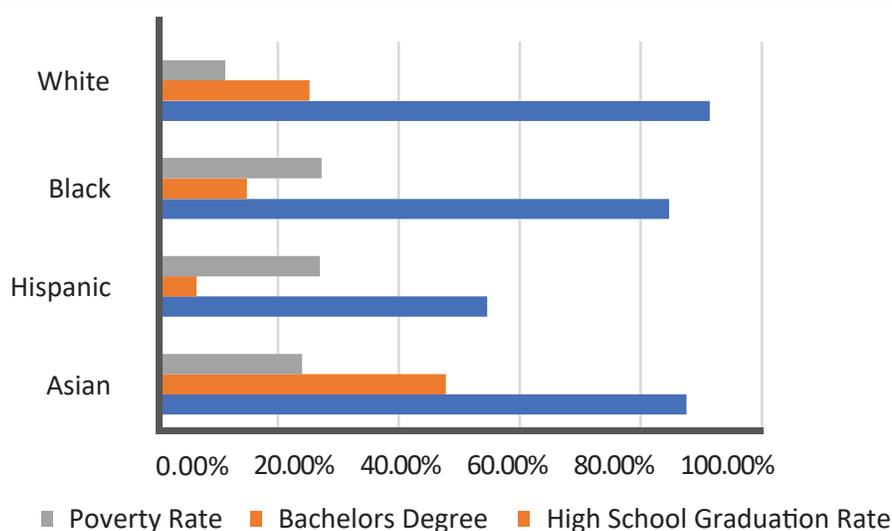
The choice to zoom into Longview is due to its unique situation on the cusp of the changes occurring in Texas. Unlike Tyler, which houses a university

connected to a robust system, The University of Texas at Tyler sits in the throes of change. It can clear a path in those Piney Woods and welcome businesses that will make it a true force to be reckoned with.

The makeup of Longview is as follows: Longview had a .14 percent, and nearby Tyler came in at 1.72³ percent population growth; both are lower than significant metropolitans of Texas. The overall racial makeup for Longview is majority white, 52.68% are Non-Hispanic-White, less than a quarter of its population is Black (22.57%) or Hispanic (20.35%) of any race, and 1.44% Asian. Black and Hispanic people have far fewer people than White people, fewer high-school graduates, and fewer people with bachelor's degrees. These indicators are disproportionate, but an even more apparent disparity is the poverty rate, surpassing the White population in percentage and raw numbers. Out of the 52.68% of residents identifying as White-Non-Hispanic, 11.3% live in poverty—about 1 in 10. This is a total of 4,674 people. Black Residents make up 22.57% of the population and have 4,864 people living in poverty, and Hispanic residents are close behind at 4,438. When looking at data on people in poverty, 17.12% of people with a high school diploma live in poverty, 12.86% of people with some college live in poverty, and only 3.75% of people with a bachelor's degree or greater live in poverty. The more education one has, the better their odds are for survival.

The disadvantages of being on the lower end of that spectrum are clear for the Black and Hispanic populations. All races graduate at around the same rate, but the drop-off happens between high school graduation and a bachelor's degree.

RACE, EDUCATION AND POVERTY



¹Texas Broadband Plan. <https://comptroller.texas.gov/programs/broadband/plan.php>

USDA ERS - What Is Rural? <https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural.aspx>

³U.S. Census Bureau QuickFacts: Longview City, Texas; Tyler City, Texas." <https://www.census.gov/quickfacts/fact/table/longviewcitytexas,tylercitytexas/PST045221> (October 11, 2022).

The correlation between race, education, and poverty directly intersects with the broader digital divide. A significant point of consideration is how to curb the disparities between those with education and without, particularly as it relates to opportunities beyond the traditional post-high-school education, which is often limited to a bachelor's degree. Without diverse education opportunities, there is a shortage in skills training; without said preparation, there is a lack of opportunity to earn a living wage; without stable salaries, there is little to no access to the services and equipment required to access a digitally driven world; from there, the cycle continues. Closing the gap means more than providing equipment. There is a broader responsibility to provide the tools needed to sustain and further mitigate the impact of poverty by providing education that serves people, regardless of race. The benefit of doing so is creating a solid workforce that fully utilizes all its human capital at maximum capacity.

OPPORTUNITY ON THE HORIZON

Opportunity. The word to sum up why Texas has the most extensive domestic migration in the country.

Texas can tout this accomplishment as an addition to its portfolio of opportunities. Some of its new tenants are significant corporations that hold a seat on the Fortune 500 list: Tesla and Hewlett Packard Enterprise, are just a few. Of the 62 corporations that relocated their headquarters to the State, 25 were from California.

In addition to the business-friendly environment of Texas, Tech Companies should see Texas as a place to settle because it has the space for settlements. Opportunity is on the horizon for its current and future residents. Longview is no stranger to this factor.

The opportunities that come from attracting new businesses extend beyond jobs; they aid in closing the broader digital divide because the traditional route to education, a bachelor's degree, is no longer an indicator of whether a person will earn a living wage or live in poverty.

Middle-stem occupations are practical options for workers who can learn a unique set of skills and hone them over time with the possibility of upward mobility and securing more income.

With 60.4 percent of Longview residents employed, nearly 20 percent live below the poverty level, which translates to 1:5 people.

The average poverty rate in the U.S. is 11.4 percent; these numbers can be curbed by fully accessing the opportunity of the changing landscape of Texas and all the perks that Longview has to provide.

INCREASING THE WORKFORCE

When choosing a place to build a distribution center, companies look for many factors: space, distance to customers, overhead cost, product reduction, and transportation routes are a few of the items to consider. Longview's rural-urban fused identity attracted the Gap, which needed an 850,000 square-foot facility to supply about 1 million products daily to consumers in the southwest region of the United States.

According to the Longview City Council, the sales tax revenue that Longview will receive from The Gap will equal about \$3 million yearly to Longview's total revenue⁴. To put this in perspective, Longview received \$25,429,647⁵ in sales tax for the 2020-2021 tax year. Three million dollars is 11.79% of that number. The Gap will contribute a large amount to the Longview Economy.

More opportunities like the Gap partnership are needed to close the digital divide. Skills to fulfill these roles are pivotal to economic growth. With only 63 percent of households having access to high-speed broadband, the potential efficacy in the job market is obvious and endless; broadband access is key to generating revenue, and many fields rely on the technology that is powered through internet access. Navigating the digital divide can greatly impact workers' income and quality of life.

RURAL TEXAS V INTERNET SERVICE PROVIDERS

Upper East Texas is considered primarily rural, and internet service providers rarely invest in these areas because they do not have to compete for customers against other service providers. They do not see the cost-benefit in investing in places that seem to be poor investments because of their current demand for their services. When considering the cost of carving out the infrastructure needed to install the newest technologies, the local economy in Longview could benefit from an investment in better coverage. Competing with an existing monopoly—a company that has established the infrastructure to provide coverage to large portions of the local population—to provide cable and digital subscriber link (DSL) connections means seeing a scenario in which the return on the investment is greater than the cost of supplying the infrastructure to high-speed house connections.

In Texas, rural areas comprise the largest population of residents without broadband access. Broadband coverage is incorrectly assessed by loose terms ranking can be attributed to the incorrect assessment of coverage areas.

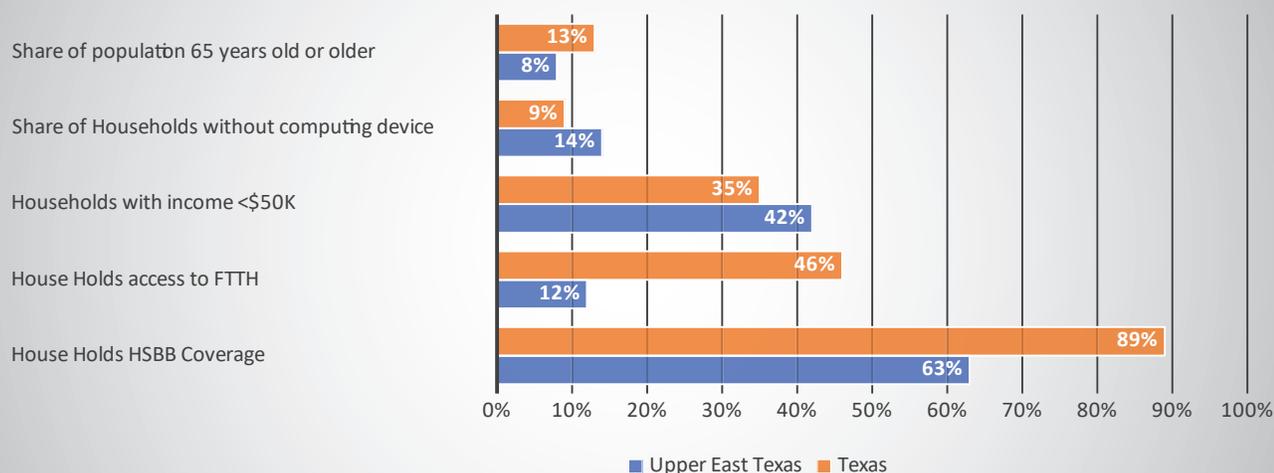
GROWTH IN MAJOR MIDDLE-STEM OCCUPATION

OCCUPATION	JOB GROWTH	INCOME POTENTIAL
Healthcare practitioners & Technical Occupations	100,000	\$49,000 - \$80,000
Healthcare Support Occupations	25,000	\$51,000 - \$70,000
Construction & Extraction Occupations	Will reach 600,000 workers	\$40,000 - \$67,000
Production Occupations	20,000	<\$66,000

⁴Gap Opens 850,000 SF Distribution Center in Longview, Texas - REBusinessOnline. <https://rebusinessonline.com/gap-opens-850000-sf-distribution-center-in-longview-texas/>.

⁵<https://www.longviewtexas.gov/DocumentCenter/View/9568/FY-22-23-Revenues?bidId=>

FACTORS THAT CONTRIBUTE TO THE DIGITAL DIVIDE



Rural areas do not attract infrastructure investment from broadband providers for two key reasons. The areas offer fewer potential customers than urban and suburban regions, and companies may calculate a lower return on investment on the infrastructure. Further, rural regions may not qualify for sufficient government infrastructure funding if any kind of high-speed service is available in the area. If even one resident of a census block has high-speed internet service, no matter the quality, the federal government considers that area to have service.

When the federal government distributed \$1.5 billion in subsidies through the Connect America Fund, a company only needed to provide 10 mbps download speeds and 1 mbps upload speeds to qualify for funding⁶. Such low service rates cannot consistently support video streaming or Zoom calling for a single person. Without competition, service providers have little incentive to upgrade infrastructure. This leaves rural Texas without the ability to attend classes online or work remotely without interruption, or to attend virtual health appointments, the impact of the digital divide on real lives. The region is left with a lack of prosperity and poverty cycles.

The mbps is important for progress and preparedness for growth. Though rural areas are not considered suitable for business for many ISPs, Texas has some of the most technologically prepared cities in the U.S. On the top ten list, two Texas cities rank high nationally in preparedness: Austin and Dallas. Texas even surpasses the U.S. on average mbps speed. The U.S. average is 36.1 mbps; Texas, fifth in the nation, has an average internet speed of 46.9 mbps.

Compare that to the speed ISPs must offer to a rural area to be classified as high speed and qualify for funding from Connect America⁷: 10 mbps.

Seeing the future possibilities is critical. An influx in corporations and the increase in the population they bring will require ISPs to upgrade their technology to meet the growing business and commerce in the East Texas area. Breaking up the current monopoly on internet service will require people to demand increased access to a viable internet connection will largely depend on if the investment potential is reasonable for the market. The outcomes of rising to the challenge of closing the digital divide will be closing inequity gaps in a city labeled urban and lacking the infrastructure to function as such, where race correlates to educational outcomes, and education outcomes are an indicator of poverty. There is hope.

⁶Trostle, H, Christopher Mitchell, Michelle Andrews, and Katie Kienbaum. "Profiles of Monopoly: Big Cable and Telecom." : 43.

⁷Ibid

Texas has surpassed California in the amount the tech industry contributes to gross state product, and growing. With \$142.8 billion⁸ of GSP from the tech industry, it is no wonder why rural areas are not regarded as sound investments for ISPs. These areas are great spaces for distribution centers and even headquarters. Tech-based employment has increased by almost 11,000 in 2021⁹, and with more corporations moving from large tech hubs such as California, home of the tech center of the nation, Silicon Valley, there is room for tech employment in Texas to grow. There is space and opportunity to develop much of rural Texas by providing the infrastructure to handle an increased volume of people, tech-driven jobs, and the educational demands required to fill them.

RECOMMENDATION 1: RESTRUCTURE CORE REQUIREMENTS

The House Bill 5 (83rd) STEM option should go from optional to required. The CTE STEM endorsement is vital to preparing students for the world they will live in beyond high school and should take the place of English IV requirements across all four offerings: Foundation High School Program (FHSP), the Minimum High School Program (MHSP), Recommended High School Program (RHSP), and Distinguished Achievement Program (DAP). Of the four endorsements, only RHSP and the DAP have an English IV designation; the other two require an advanced English course or an approved alternative. The label of "approved alternative" demonstrates choice and that viable substitutes are available. No matter the course of study, digital literacy, at the least, and blue-collar STEM options, ideally, are vital to a seamless transition into the world beyond secondary schooling.

Creating a pathway to ensure stability and better wages is one of three indicators of progress in closing the digital divide.

⁸"Texas Ranks as Top State for Tech Workers." InnovationMap, 12 Apr. 2022, <https://houston.innovationmap.com/sysaid-texas-tech-workers-2657138351.html>.

⁹Loten, Angus. "Florida, Texas Lead Nation in Tech Job Gains." Wall Street Journal, 30 Mar. 2022. [www.wsj.com](https://www.wsj.com/articles/florida-texas-lead-nation-in-tech-job-gains-11648674042), <https://www.wsj.com/articles/florida-texas-lead-nation-in-tech-job-gains-11648674042>.

RECOMMENDATION 2: INNOVATIVE SCHOOLS

While many Americans have bipartisan thoughts on the need to modernize our outdated industrialized form of education, the right formula has not yet been solidified. With construction and expansion at the top of the list for Longview ISD, the district should think with complete sustainability in the growing landscape of Texas. In thinking about the unique dimensions of cities like Longview that have left it stuck in the margins of rural and urban challenges, innovative schools provide a path to forward thinking and forward education.

Innovative schools should be designed to solve local problems pertaining to infrastructural needs, improve civil services, and think through future developmental problems that comes with being a growing society. Innovative schools invest students in contributing to the needs of their local community and inspire personal ownership of its progress.

RECOMMENDATION 3: COMMIT TO 10

Social scientist Malcolm Gladwell says it takes 10,000 hours to become an expert at something. For children who need more means to obtain resources to refine a hobby or a skill, 10,000 hours is likely unattainable. While 1:1 ratios of computers are a fantastic effort in the trek toward curbing the digital divide, 1:1 ratios of equipment such as 3D printers, robots, computers with the capacity to code, technology to improve agriculture, and the many tools that are used to learn and perfect a technological-based skill are vital and will equip students with the skills needed to perform in a tech-driven society and close the broader digital divide. Students should partake in residencies where professionals come in and bring the information, skills, and practice to the classroom. This will remove barriers of time, money, and transportation and allow them to learn a skill over a few weeks. Providing the equipment and engaging in residencies will open up the space and capacity for students to reach the 10,000 hours required to achieve expertise.



KEY TAKE AWAYS:

Curtailing the digital divide will take more than providing devices like computers and hotspots. This method is insufficient because the outcome does not lead to a lasting impact. The answer to closing the digital divide lies outside the devices themselves. The job opportunities that come from having digital proficiency and STEM education are increasingly in demand, ultimately requiring upgraded technological access. Preparing students with the skills to fill the tech jobs will, in turn, have the trickle-down effect of maintaining and improving access to digital resources, closing the generational poverty gap, and righting the wrongs of systemic despair. This despair asks some members of society to defy a megaton of odds. It starts with planting a seed that paves a pathway to justice. Where you live should not determine your potential to succeed and contribute to your community's progress.