



# Providing Learning Anywhere: K-12 Education in Texas



The usage of online learning is surging in K-12 education with access to broadband technology.<sup>1</sup> At the turn of the century there were 40,000 to 50,000 K-12 distance learners. During the 2009-2010 school year approximately 1.8 million K-12 students were involved in distance learning.<sup>2</sup> Last year 40 states reported having virtual networks or state-led online learning programs for K-12 education, and Texas has one of the largest networks.<sup>3</sup>

The Texas State Legislature in 2007 created a program called the Texas Virtual School Network. This program offers students the ability to have blended learning (in-class and online) or supplement courses offered in their school district through online learning. Thousands of students have enrolled into the Texas Virtual School Network.<sup>4</sup>

The use of technology in education of K-12 students influences the use of technology at home. Studies show there is an association between technology adoption at home and with the presence of children at home. Households that have the presence of school-aged children are more likely to own a computer and have a broadband subscription than households without the presence of school-aged children.<sup>5</sup>

The 2011 Connected Texas Residential Technology Assessment explored the link between education and technology in households with children. In this report we discuss home technology adoption among households with children using the Internet at home or at school, and barriers to broadband adoption.

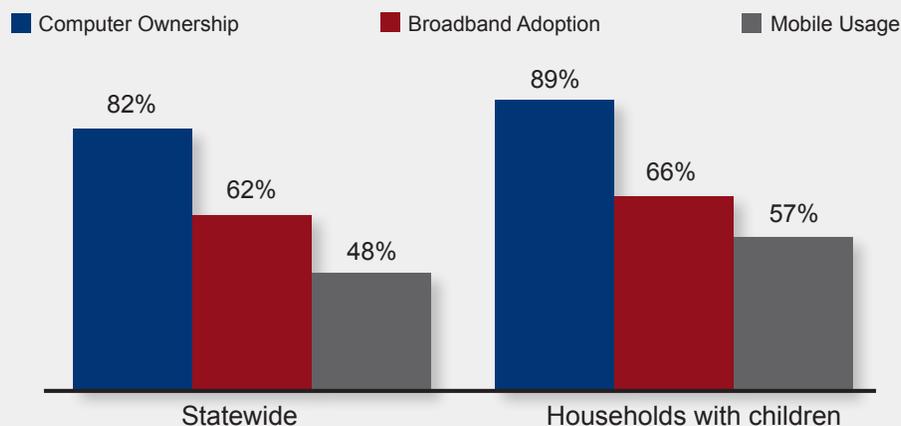
## Home Technology Adoption

Texas has 3.47 million households where children are present.<sup>6</sup> In Figure 1 it can be seen that households with children at home have higher adoption rates of technology when compared to the state average.

### Among the findings from this survey:

- Households with children have higher adoption rates of technology than the state average. Computer ownership is **seven percentage points higher** among household with children, while broadband adoption is **four percentage points higher** and mobile usage is **nine percentage points higher** than in homes without children.
- Approximately **1 million** households with children in Texas said that they subscribed to broadband service because someone in the home needed it for schoolwork.
- Half of the households with children** in Texas said that children use home Internet service for schoolwork. In addition, **more than six out of ten (61%)** adults with children at home said that children are using the Internet at school for schoolwork.
- More than four out of ten (44%)** households with children have a combination of desktop and laptop or tablet computers at home to access the Internet.

**Figure 1.**  
Home Technology Adoption among Households with Children



1 iNACOL, [http://www.inacol.org/research/docs/iNACOL\\_Fed\\_Frameworks.pdf](http://www.inacol.org/research/docs/iNACOL_Fed_Frameworks.pdf)

2 iNACOL, [http://www.inacol.org/press/docs/nacol\\_fast\\_facts.pdf](http://www.inacol.org/press/docs/nacol_fast_facts.pdf)

3 Keeping Pace with K-12 Online Learning, <http://kpk12.com/cms/wp-content/uploads/KeepingPace2011.pdf>

4 Raise Your Hand Texas, <http://www.raiseyourhandtexas.org/wp-content/uploads/2012/10/virtual-schools-white-paper.pdf>

5 NTIA, [http://www.ntia.doc.gov/files/ntia/publications/exploring\\_the\\_digital\\_nation\\_computer\\_and\\_internet\\_use\\_at\\_home\\_11092011.pdf](http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_computer_and_internet_use_at_home_11092011.pdf)

6 United State Census, <http://factfinder2.census.gov/>

Nearly nine out of ten households with children (89%) own a computer. That translates into 7.2 million Texas adults living in a household with children that have either a desktop, laptop, or tablet computer. Broadband adoption and mobile usage in households with children are also higher than the state average. Two thirds, or 66%, of households with children subscribe to home broadband service. Also, 57% of households with children use mobile Internet.

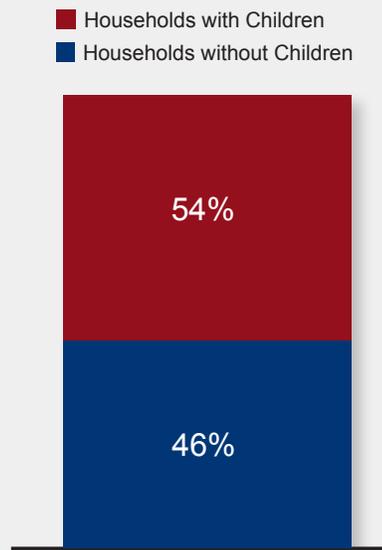
### Reason for Home Internet Adoption

The presence of children at home has an influence on the decision to adopt technology. There are 1.8 million adults in Texas who say they first subscribed to broadband service because someone needed it for schoolwork. Coincidentally, the majority of these households (54%) are ones with children, while 46% do not have children living at home (Figure 2). This translates into 1 million Texas parents who subscribed to home broadband service because someone needed the service for school.

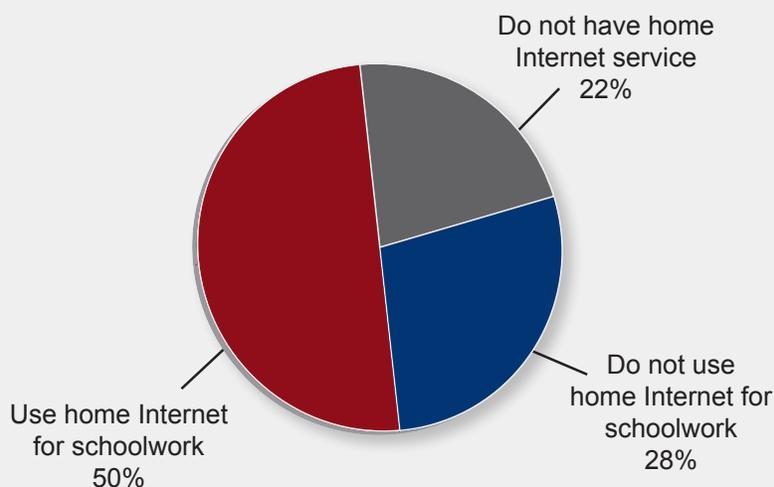
### Using the Internet for Schoolwork

Of all households with children in Texas, exactly one-half subscribe to Internet service that the children use to conduct schoolwork. (Figure 3). That is 4 million Texas adults whose children are using the Internet outside of school to learn through online resources. Another 28% of households with children have an Internet connection that the children are not using for schoolwork.

**Figure 2.**  
Among Households that Subscribed to Broadband Because a Family Member Needed it for School



**Figure 3.**  
Among Texas Households with Children



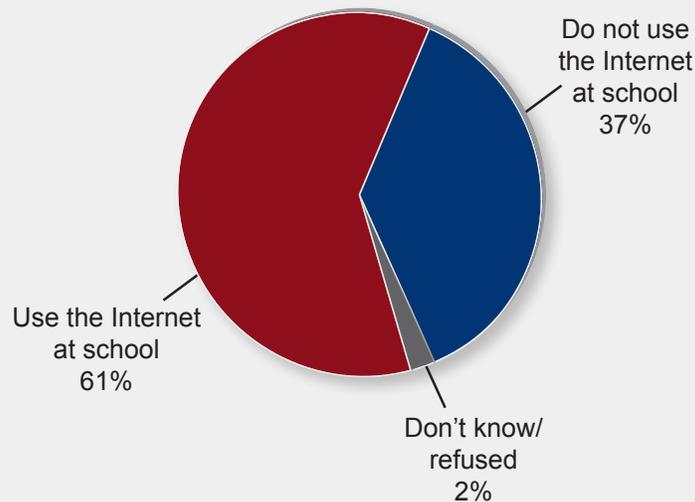
In homes where children are using Internet service for schoolwork, more than four out of ten (44%) have a desktop and either a laptop or tablet computer available (Table 1). Additionally, 31% have only a desktop computer and 23% only have a laptop computer. Less than one percent of households where children use the Internet for schoolwork rely exclusively on tablet computers.

**Table 1.**  
Computer Ownership among Households Where  
Children Use the Internet for Schoolwork

Computer Ownership	Percentage of Computer Ownership
Desktop computer only	31%
Laptop computer only	23%
Tablet computer only	<1%
Desktop and either a Laptop or Tablet computer	44%
Don't know/refused	2%

While over one-half of households with school-age children use home Internet service for schoolwork, even more use the Internet at school for class work. Over six out of ten children (61%) use the Internet at school for their schoolwork (Figure 4). More than one-third of adults with children living at home (39%) say that their children do not use the Internet at school or they don't know if their children are using the Internet at school.

**Figure 4.**  
Children Using the Internet at School



## Access to Broadband Service

Every six months Connected Texas updates information on availability to home broadband service in the state. As of the May 2012 update, it was estimated that nearly 497,000 households in the state do not have access to broadband service of 3 Mbps download speed and 768 Kbps upload speed.<sup>7</sup> This speed tier has been identified by the Federal Communications Commission as necessary for conducting basic Internet applications. In a survey conducted by Connected Texas in 2011 of households not adopting home broadband service, one out of ten households with children in the state (10%) identified availability as the main reason for not adopting home broadband service.

## Conclusion

Access to technology and the use of technology by students inside and outside of the classroom is changing the landscape of education. A majority of states in the US have established an online portal for K-12 students to learn using technology. Texas has one of the largest virtual school networks of any state.

Households with children are more likely to have computers and adopt available broadband service when compared to the state average. In fact, half of Texas households with children that have both Internet service and computers in the home say that children are using those technologies for schoolwork. Furthermore, 61% of households with children in the state say their children are using the Internet at school.

Even though substantial progress has been made in technology adoption and use, not all homes in the state have access to broadband service. Nearly 497,000 households in the state do not have access to broadband service of at least 3 Mbps download and 768 Kbps upload, or the speed necessary to use basic online applications. There are approximately 2.7 million adults with the presence of children at their home that do not adopt broadband service at home for a variety of reasons, with 10% citing lack of availability as the main reason for not adopting.



<sup>7</sup> <http://www.connectedtx.org/planning>

## Methodology

Between June 22 and July 18, 2011, Connected Texas conducted random digit dial telephone surveys of adult heads of households across Texas. This sample included 1,001 adults age 18 or older who were contacted via landline and 196 adults who were contacted via cell phone. Once the respondent agreed to participate, these surveys took approximately eleven (11) minutes to complete and were designed to measure technology adoption (including speeds and prices) and usage. Surveys were conducted in both English and Spanish.

Quotas were set by age, gender, and county of residence (urban, suburban, or rural), based on 2010 United States Census data. The data were weighted using a rim weighting process to account for any minor variances between the statewide population and the survey sample based on these factors. Based on the effective sample size for this statewide sample, the margin of error =  $\pm 3.47\%$  at a 95% level of confidence.

In addition, Connected Texas surveyed a total of 2,400 adult heads of households who do not subscribe to home broadband service (including 200 adults who were contacted on a cell phone) to explore barriers to broadband adoption and measure these adults' willingness to subscribe at different prices. Once respondents agreed to participate, these surveys took approximately seven (7) minutes to complete. This sample was also weighted by age, gender, and county of residence using a rim weighting process to account for minor variances between the sample and the population of non-adopters, as identified through the residential survey. At a 95% level of confidence, this sample provides a margin of error of  $\pm 2.37\%$  among all residents who do not subscribe to home broadband service.

As with any survey, question wording and the practical challenges of data collection may introduce an element of error or bias that is not reflected in these margins of error. For this report, "rural" residents are defined as those living in counties that are not part of a Metropolitan Statistical Area (MSA). Surveys were conducted by Eastern Research, with weighting and research design consultation provided by Lucidity Research LLC. Survey results were subsequently peer reviewed for accuracy by experts in survey design and statistics at the University of Texas at Austin.

These surveys were conducted as part of the State Broadband Initiative (SBI) grant program, funded by the National Telecommunications and Information Administration (NTIA). The SBI grant program was created by the Broadband Data Improvement Act (BDIA), unanimously passed by Congress in 2008 and funded by the American Recovery and Reinvestment Act (ARRA) in 2009. To learn more about Connected Texas please visit [www.connectedtx.org](http://www.connectedtx.org) or e-mail us at [info@connectedtx.org](mailto:info@connectedtx.org).

**APPENDIX A:  
Select questions and sample sizes**

**2011 Texas Residential Technology Assessment**

	Statewide <i>n</i>	Households with Children <i>n</i>
Total	1,197	447
Computer in Households	643	554
Broadband at Home	713	216
Mobile Usage	424	204

**Which one of these is the main reason why you decided to subscribe to home broadband service?**

	Statewide <i>n</i>	Households with Children <i>n</i>	Households without Children <i>n</i>
Someone in your home needed broadband for school	103	53	50

**2011 Texas Residential Non-Adopter Assessment**

**Which one of these is the main reason why you do not subscribe to home broadband service?**

	Households with Children <i>n</i>
Available*	246

\* Responses for availability are “available broadband service is not fast enough to be worthwhile” or “broadband service is not available where you live”