



Making the Connection through Digital Literacy

August 2012



Digital literacy, or the knowledge of how to use a computer and the Internet, is growing in importance as today's workforce becomes more closely tied to technology. The United States Department of Commerce notes that 62% of all employed adults in the United States use the Internet for their jobs.¹ Yet even with this widespread use, the Federal Communications Commission reports that 66 million Americans do not have sufficient computer or Internet skills, representing one in five Americans.^{2,3}

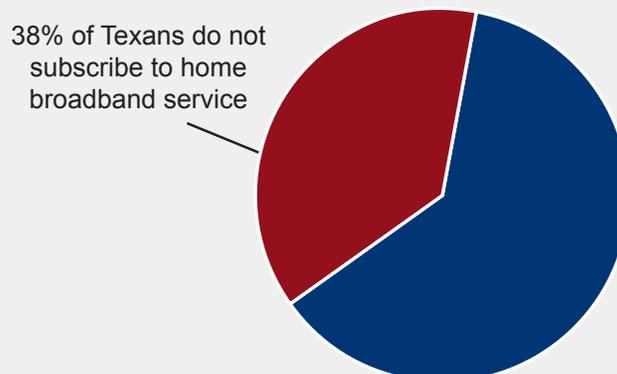
Teaching Texans these skills is vital to ensure that those who are employed today, as well as those looking for employment, have the ability to compete with workers from around the world. The need for digital literacy skills is reshaping the old mantra in education of teaching reading, writing, and arithmetic. Embracing information and communications technologies in the curriculum are important in the twenty-first century.⁴

In the 2011 Connected Texas Broadband Non-Adopter Survey, four main barriers to home broadband adoption were identified as shortcomings in digital literacy: Texans who do not feel comfortable using a computer, those who have concerns about fraud or identity theft, those who say they do not know what broadband is or anything about broadband, and Texans who fear that broadband is too complicated to use. To help address these issues that span across geographic, social, and economic lines, Connected Texas and several other organizations are working to ensure that everyone who wants to learn how to use broadband has that opportunity.

Barriers to Broadband Adoption in Texas

According to Connected Texas' 2011 Residential Technology Assessment, 38% of Texans do not subscribe to home broadband service (Figure 1). That leaves approximately 6.9 million Texas adults without broadband at home.

Figure 1.
Home Broadband Adoption in Texas



Among the findings from this survey:

- Approximately **1.4 million**, or **20%** of Texans who do not have broadband at home, cite the lack of digital literacy as their main barrier to subscribing to service.
- The fear that the Internet is too complicated is the top barrier among Texans who report concerns about their digital literacy skills, representing **446,000** Texas non-adopters. That is followed by **357,000** who say that they do not know what broadband is or anything about it, **310,000** who have concerns about fraud or identity theft, and **290,000** who are not comfortable using a computer.
- The median age of Texans who say a lack of digital literacy skills is their main barrier to broadband adoption is **51 years of age**, compared to the median age of all non-adopters in the state of **42 years of age**.
- Statewide, approximately **600,000 Hispanics, 544,000 Caucasians, and 198,000 African Americans living in Texas** cite digital literacy as a barrier to home broadband adoption.
- Texan non-adopters who earn **\$75,000 or more per year** are significantly more likely to cite digital literacy as a main barrier than any other income bracket. This may be due to non-adopters with higher income being less constrained by cost barriers.

1 http://www.commerce.gov/news/fact-sheets/2011/05/13/fact-sheet-digital-literacy#_edn4

2 <http://factfinder2.census.gov/>

3 <http://www.connect2compete.org/news/07-23-12/getting-past-catch-22-digital-literacy>

4 http://www.reading.org/Libraries/Position_Statements_and_Resolutions/ps1067_NewLiteracies21stCentury.sflb.ashx

Texans who have not adopted home broadband service offer a variety of reasons as to why they do not subscribe. One in five Texas non-adopters (20%) say that a lack of digital literacy skills is the main reason that they do not subscribe to home broadband service, making digital literacy second only to cost as a barrier to broadband adoption in Texas (Figure 2).

This represents approximately 1.4 million Texas adults who feel they lack the needed digital literacy skills, including 446,000 Texans who report that broadband and the Internet are too complicated, 357,000 adult Texans who report that they do not know what broadband is or anything about it, 310,000 who cite fears about online security and their ability to avoid online fraud or identity theft, and 290,000 who do not even feel comfortable using a computer, let alone connecting to the Internet (Figure 3).

Figure 2.
Barriers to Broadband Adoption in Texas

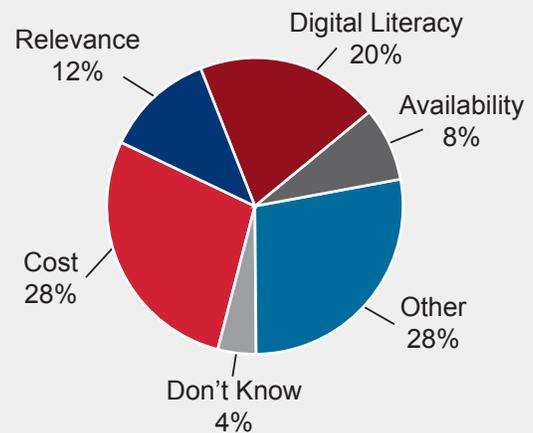
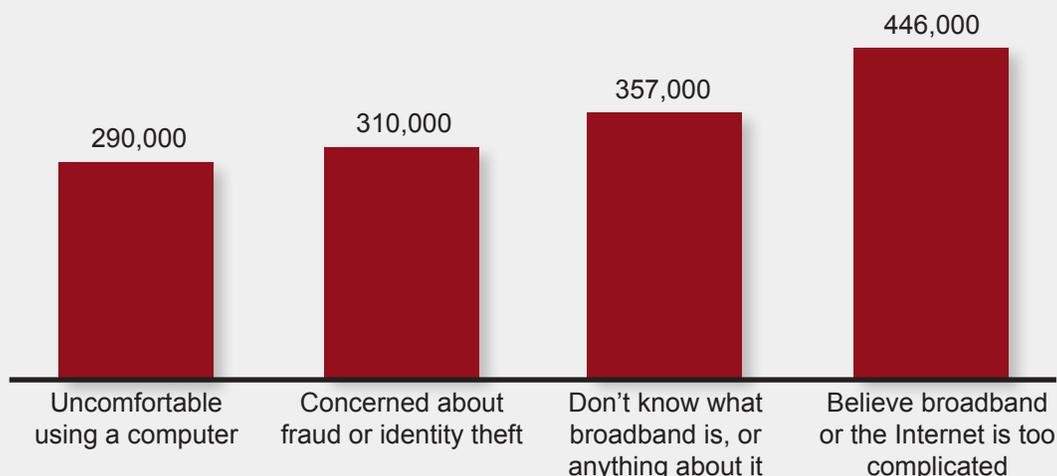


Figure 3.
Texans Who Report Digital Literacy as Their Main Barrier to Home Broadband Adoption



Digital Literacy: An Issue that Crosses Demographic Lines

Across the state of Texas, 20% of non-adopters report that a lack of digital literacy is their main barrier to home broadband adoption. This figure remains relatively stable across several demographic categories, suggesting that this issue affects Texans regardless of where they live, their racial and ethnic identities, their educational attainment, or how much money they make. The only noticeable variation is between Texans of differing ages.

For non-adopters in rural Texas, a lack of broadband availability may be a larger barrier to broadband adoption. However, they are slightly less likely than Texans in non-rural areas to report that digital literacy is their main barrier to home broadband adoption (Table 1).

Table 1.
Digital Literacy as a Barrier by Geography

	% Reporting Digital Literacy As Their Main Barrier to Broadband Adoption
Statewide	20%
Rural	18%
Non-Rural	21%

Similarly, among Caucasians, African Americans, and Hispanics in the state, there are no significant differences in the percent of non-adopters who report that a lack of digital literacy skills is their main barrier to home broadband adoption (Table 2). Statewide, approximately 600,000 Hispanics, 544,000 Caucasians, and 198,000 African Americans living in Texas cite digital literacy as their main barrier to home broadband adoption.

Table 2.
Digital Literacy as a Barrier by Race and Ethnicity

	% Reporting Digital Literacy As Their Main Barrier to Broadband Adoption
Statewide	20%
Caucasian	21%
Black, or African American	23%
Hispanic	19%

Surprisingly, concerns about a lack of digital skills also shows little variance based on educational attainment (Table 3).

Table 3.
Digital Literacy as a Barrier by Educational Attainment

	% Reporting Digital Literacy As Their Main Barrier to Broadband Adoption
Statewide	20%
High School Diploma or Less	20%
Some College	19%
College or Advanced Degree	20%

Texas non-adopters who report that they have earned a college or advanced degree are just as likely as those who report having a high school diploma or less to say that they do not subscribe to home broadband service due to a lack of digital literacy skills.

Similarly, digital literacy as a barrier to home broadband adoption is similar across most economic lines, with similar percentages in each income bracket reporting that they do not subscribe to home broadband service due to not having adequate digital literacy skills (Table 4).

Table 4.
Digital Literacy as a Barrier by Annual Household Income

	% Reporting Digital Literacy As Their Main Barrier to Broadband Adoption
Statewide	20%
Less than \$25,000	20%
\$25,000-\$49,999	18%
\$50,000-\$74,999	19%
\$75,000 or more	24%

The one exception is among those in the highest income bracket; Texan non-adopters who earn \$75,000 or more per year are significantly more likely to say that a lack of digital literacy skills is their main barrier to home broadband adoption. This may be because non-adopters in this higher income bracket are less likely to be constrained by cost barriers.

Despite the consistency with which Texas non-adopters cite a lack of digital literacy skills as their main barrier to home broadband adoption, age is one area where there are significant variations in the impact of digital literacy as a main barrier (Table 5).

The median age among Texans who find digital literacy to be a barrier to adoption is 51 years old, compared to 42 years of age for all non-adopters in Texas. Moreover, nearly one-third (30%) of non-adopters who are age 65 or older cite a lack of digital literacy as their main barrier to broadband adoption. This means that for approximately 431,000 Texans age 65 or older the main issue preventing them from subscribing to home broadband service is a lack of knowledge on how to use the technology.

Table 5.
Digital Literacy as a Barrier by Age

	% Reporting Digital Literacy As Their Main Barrier to Broadband Adoption
Statewide	20%
Age 18-34	13%
Age 35-54	21%
Age 55-64	26%
Age 65 or Older	30%

Conclusion

The need to improve digital literacy skills among Texas residents, particularly among older Texans, is vital. Although, for the 1.4 million Texans who cite this barrier, there are currently programs underway to assist with teaching and improving digital literacy skills.

A national effort for digital literacy is sponsored by the Federal Communications Commission called Connect2Compete. The program offers digital literacy training, discounts on broadband service, and low-cost computers. The program will be broadening its reach from the pilot program in San Diego, CA, to a presence in all 50 states.⁵

There are a number of local digital literacy programs that are underway in Texas, too. The Texas Connects Coalition is a collaborative effort between Austin Free Net and Technology-For-All that provided digital literacy training for over 46,000 residents of Austin, Houston, San Antonio, and rural portions of Texas in 2011.⁶ In addition, the Texas State Library & Archives Commission is leading a program called Technology Expertise, Access, and Learning for all Texans (TEAL) that offers 38 public computing centers at libraries, community colleges, public schools, recreation centers, and healthcare facilities.⁷ These locations offer vulnerable populations access to workforce development programs and digital literacy training.

In March 2012, Connected Texas launched the Every Community Online (ECO) program to offer free training of computer and Internet skills to Texans across the state.⁸ The purpose of ECO is to provide guided training to all Texans who are interested in learning about the Internet.

5 <http://www.connect2compete.org/about-us>

6 <http://www.techforall.org/Programs/TexasConnectsCoalition/tabid/176/Default.aspx>

7 http://www.2.ntia.doc.gov/files/grantees/fact_sheet_-_tx_state_library_archives.pdf

8 <http://www.connectedtx.org/every-community-online>

Making the most of the Internet requires many interrelated competencies, each of which are addressed through the ECO program:

- **Computer use:** keyboarding skills; how to use a mouse; how to save and transport data; software use; word processing skills such as formatting, fonts, and opening and closing documents.
- **Internet use:** getting and using an e-mail account; discerning scam sites from real sites; protecting oneself and computer from malware; and how to use a web browser.
- **Consumer equipment:** What equipment is needed, and where can it be purchased? What happens in the event that a piece of hardware breaks?
- **Basic computer maintenance:** Protecting the computer from malware; software upgrades; and data management.
- **Service providers:** What should one expect from a service provider, what are consumers' rights, what is the provider responsible for, what is the consumer responsible for?

ECO offers a curriculum that is flexible, easy to deliver, and tailored to each participant's experience and needs. It includes a total of six hours' worth of introductory material delivered in a self-paced format covering a wide variety of skills. Currently, the introductory regimen consists of: Basic Introduction to Computers, An Introduction to the Internet, and Tools and Benefits of Using the Internet, for a total of six hours of training. Altogether, the course is designed to make participants aware of the many benefits that broadband can present.

By providing these opportunities for Texans to learn how to make the most of broadband technology, organizations across the state are making an investment in the future of Texas' workforce.



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 was 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 or e-mail us at info@connectedtx.org.

APPENDIX A:
Select questions and sample sizes

2011 Connected Texas Residential Technology Assessment

	<i>n</i> All Respondents
Total	1,197
Subscribe to Broadband	713
Do not subscribe to Broadband	484

2011 Texas Non-Adopter Assessment

	<i>n</i> All Respondents
Total	2,400

Rural/Non-Rural Residents

	<i>n</i> All Respondents
Rural	658
Non-Rural	1,742

Which of the following race (or races) do you consider yourself to be?

	<i>n</i> All Respondents
Caucasian	1,023
Black, or African American	326
Hispanic	701

What was the last class or grade of school that you completed?

	<i>n</i> All Respondents
High School Diploma or Less	1,397
Some College	454
College or Advanced Degree	487

Which of the following categories best describes the total annual household income earned by all wage earners in your household?

	<i>n</i> All Respondents
Less than \$25,000	878
\$25,000 - \$49,999	559
\$50,000 - \$74,999	223
\$75,000 or more	228

May I have your age please?

	<i>n</i> All Respondents
Age 18 - 34	460
35 - 54	731
55 - 64	558
Age 65 or older	651