Resolving Digital Inequality Issues

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slides created for BSU
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Good afternoon. My name is Heather Braum. I serve as the Chief Technology Adviser to the State Superintendent of Public Instruction. She has asked for my assistance in budgeting the best use of $50 million to address digital inequalities across the state. She has proposed several options for this money, and I have also made a few recommendations. This presentation will examine what digital inequality means, what options might help address these digital inequalities, and what recommendations I believe will be the best use of these funds.

Background

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However, before we get started, let's look at some background information from the Pew Internet and American Life Project on digital trends in the United States.

Demographics of internet users

Below is the percentage of each group who use the internet, according to our December 2010 survey. As an example, 76% of adult women use the internet.

	% who use the internet
Total adults	**77**
Men	78
Women	76
Race/ethnicity	
White, Non-Hispanic	80
Black, Non-Hispanic	69
Hispanic (English- and Spanish-speaking)	66
Age	
18-29	90
30-49	84
50-64	76
65+	46
Household income	
Less than $30,000/yr	63
$30,000-$49,999	79
$50,000-$74,999	92
$75,000+	96
Educational attainment	
Less than High School	40
High School	69
Some College	89
College +	93
Community type	
Urban	78
Suburban	80
Rural	68

Source: The Pew Research Center's Internet & American Life Project, November 23-December 21, 2010 Social Side of the Internet Survey. N=2,303 adults, 18 and older, including 748 reached via cell phone. Interviews were conducted in English and Spanish.

Who's Online?

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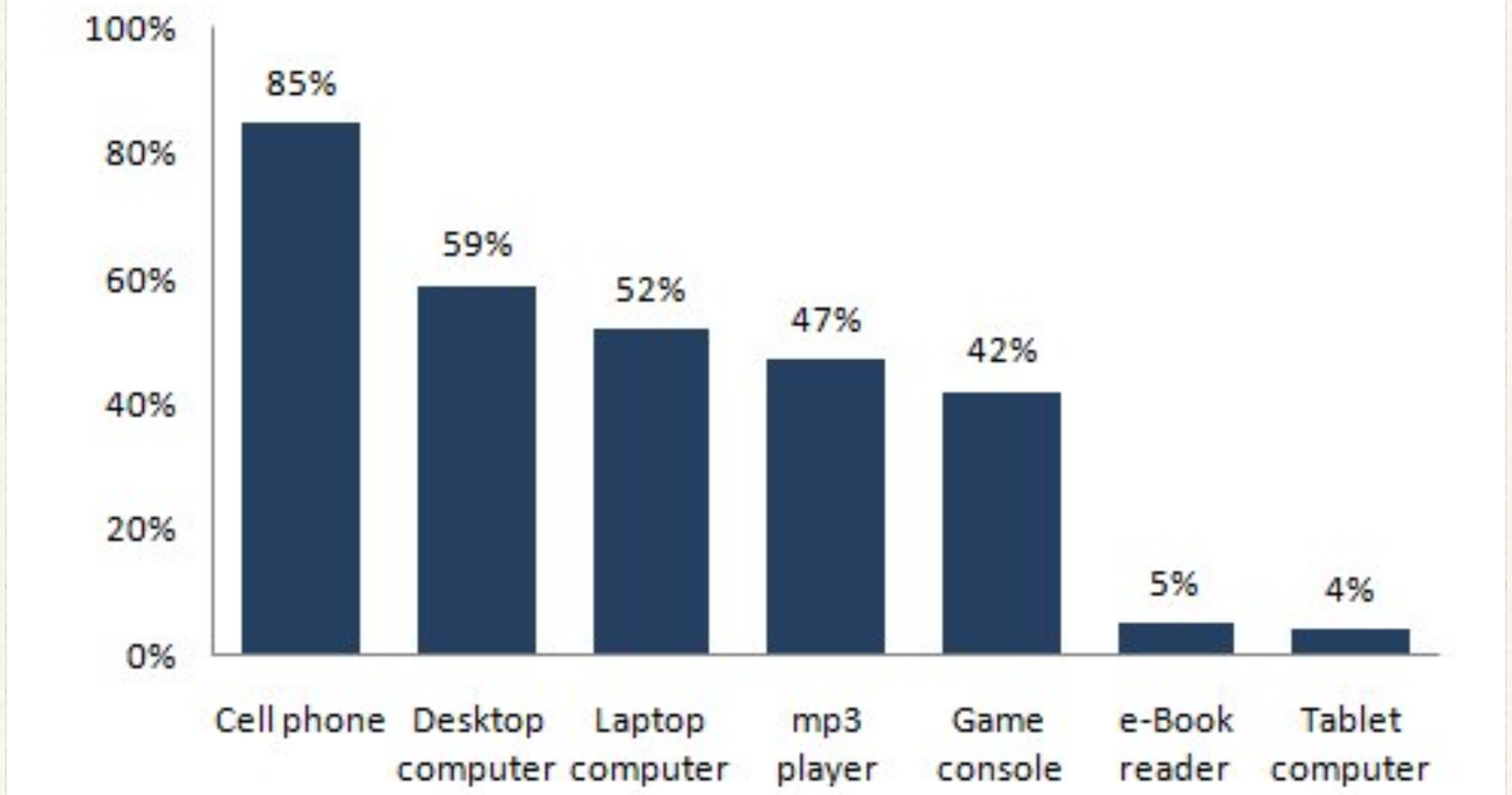
Infographic Credit: http://pewinternet.org/Static-Pages/Trend-Data/Whos-Online.aspx

Who's online? The Pew Internet and American Life Project has been doing research for more than a decade into the Internet usage/non-usage of Americans. This infographic shows the demographics of Internet users as of December 2010. Some differences in adoption rates are quite obvious.



Gadget Ownership

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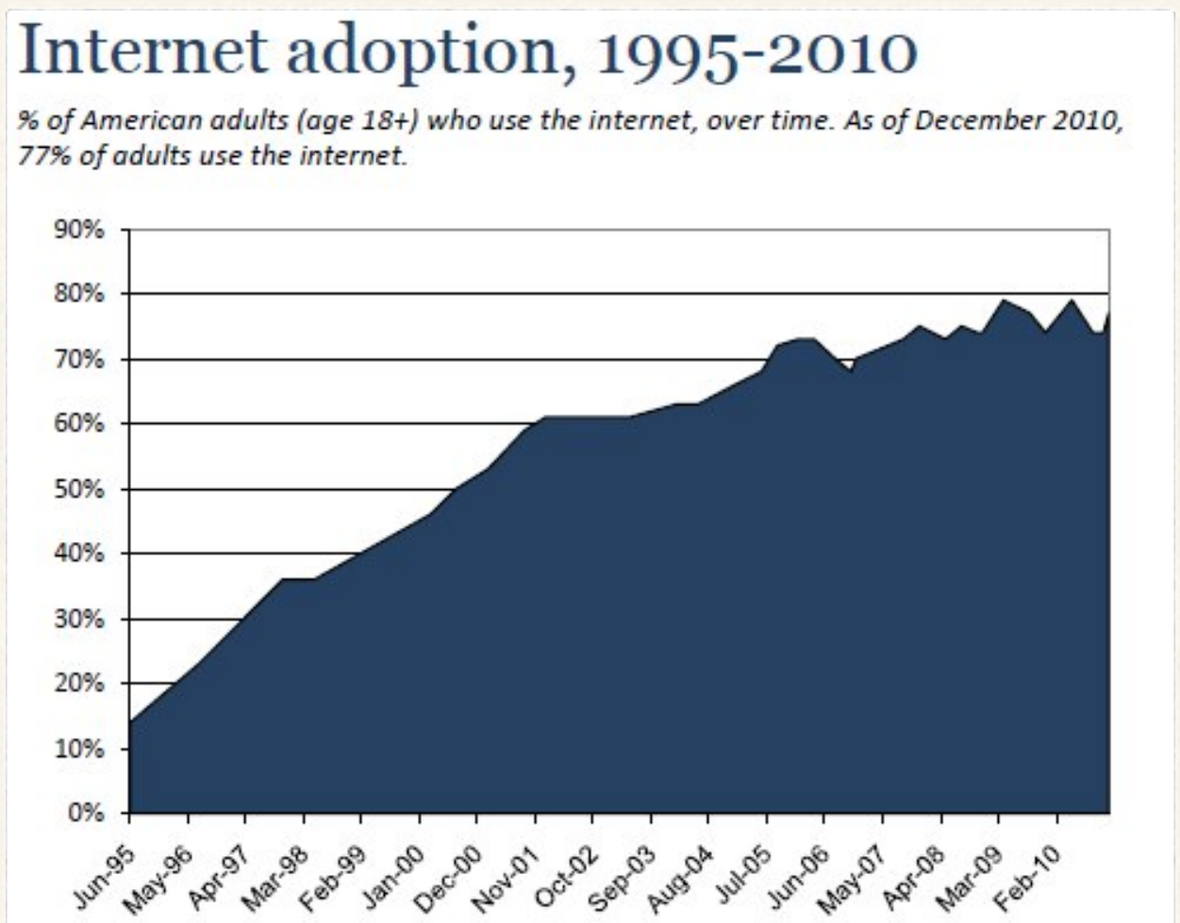
Infographic Credit: http://pewinternet.org/Trend-Data/Device-Ownership.aspx

What types of gadgets do Americans own? Surprisingly, 85% of the population owns a cell phone and only 59% and 52% own a desktop or laptop computer. What will the impact of mobile technology be in the future?



Internet Adoption

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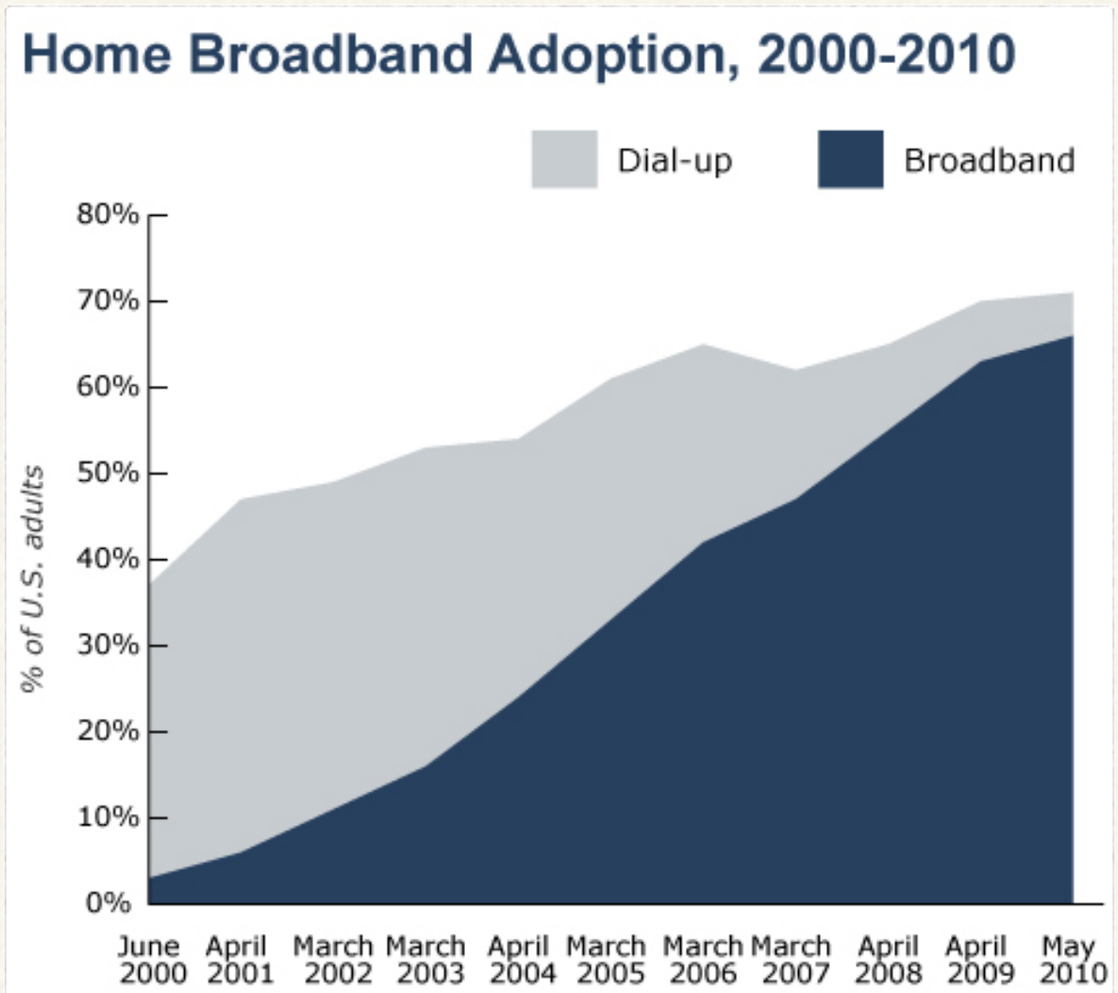
Infographic Credit: http://pewinternet.org/Trend-Data/Internet-Adoption.aspx

This infographic shows the increase of Internet adoption. What is interesting is that the adoption rate has leveled off over the past few years. Why is this?



Home Broadband Adoption

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Infographic Credit: http://pewinternet.org/Trend-Data/Home-Broadband-Adoption.aspx

This infographic looks at home broadband adoption rates. This rate, too has leveled off and doesn't quite reach 70% yet. What about the 30 percent without broadband or dial-up access?

Definitions

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That leads us to the issues that bring us here today: Digital divide and digital inequality. Let's first define these two terms.

Digital Divide

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Photo Credit: http://www.flickr.com/photos/curiouskiwi/502452945/ (Creative Commons)

The digital divide is a term that has been around for a long time. From this image, you can see separation between the grapes. That's a simple picture of the digital divide. You either have access to digital technology, to the Internet, or you don't.

The **digital divide** is simply...

- people either have access to computers or they do not.
- people either have access to broadband Internet or they do not
- people either have access to mobile Internet or they do not

It is the **haves** vs. the **have nots**.

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Here's the definition formally spelled out. I have chosen three of the most common parts of the digital divide today to frame it. People either have access to computers, broadband Internet, and the mobile Internet, or they do not. It is seen as the haves vs. the have nots. DiMaggio (2004, 9).

vs.

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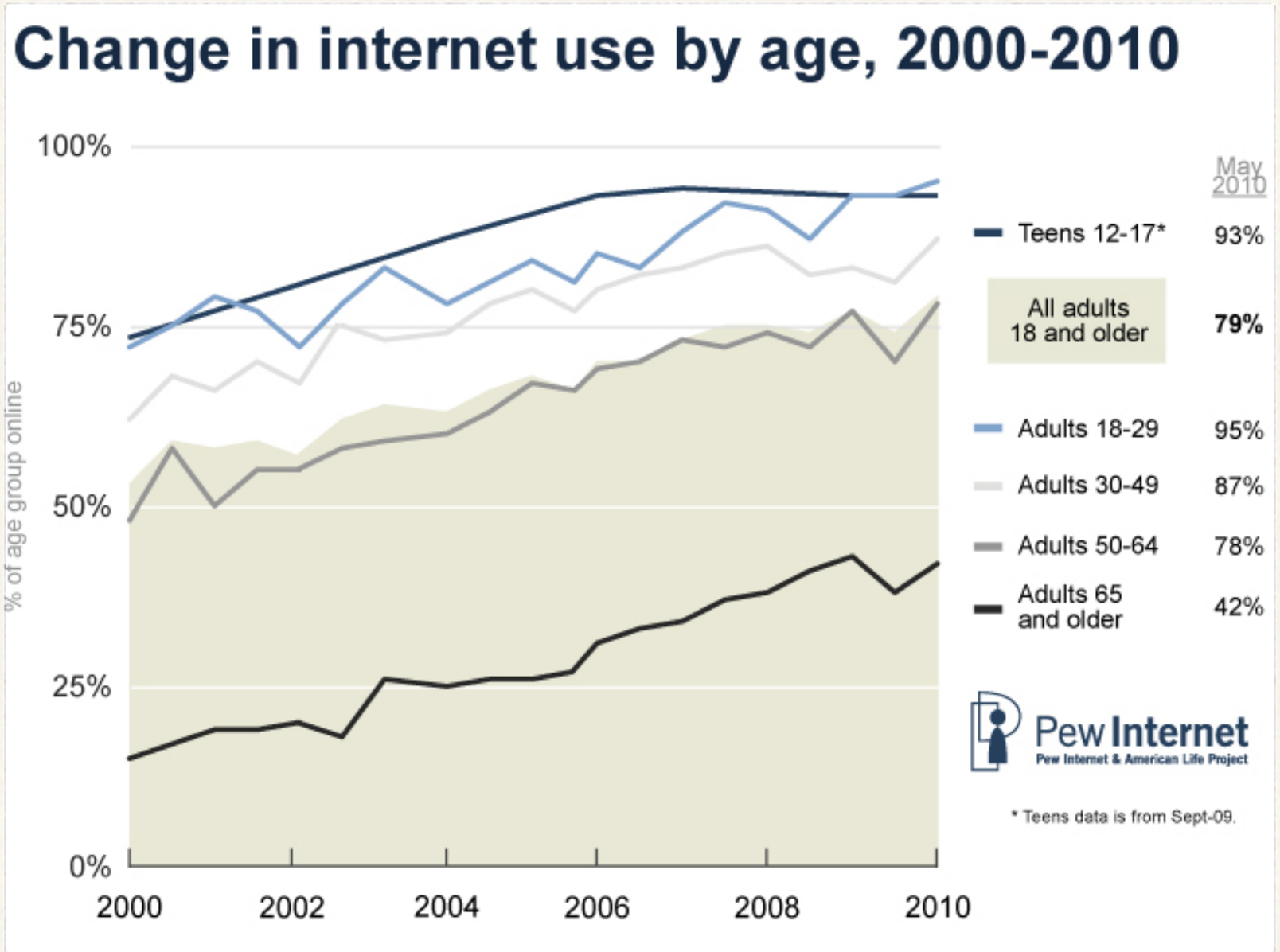
But the digital divide is much more than access. It's not as simple as the haves vs the have nots. The situation is quite complex and is influenced by a number of factors. Research by organizations such as the Pew Internet and American Life Project (2010) and DiMaggio, Hargittai, Celeste, and Shafer (2004) point out the various elements of inequality in digital access.



Digital Inequality

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Infographic Credit: http://pewinternet.org/Infographics/2010/Internet-acess-by-age-group-over-time-Update.aspx

Digital inequality can be seen through demographics, such as age, as the above graph shows. Digital inequality can also be seen through several forms that include equipment, skill, and social networks.

Digital inequality...

recognizes that there are complex reasons for the digital divide and access varies depending on the demographic, including:

- age
- geographic location
- race
- socio-economic status
- education level

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Going further, digital inequality recognizes that there are complex reasons for the digital divide and access varies depending on the demographic, including age, geographic location, race, socio-economic status, and education level.

Digital inequality...

also recognizes that the inequality of digital access is influenced through these forms:

- technical (equipment to access)
- autonomy (type of access)
- skill (ability level)
- social support (network for help)
- purposes (reasons using)

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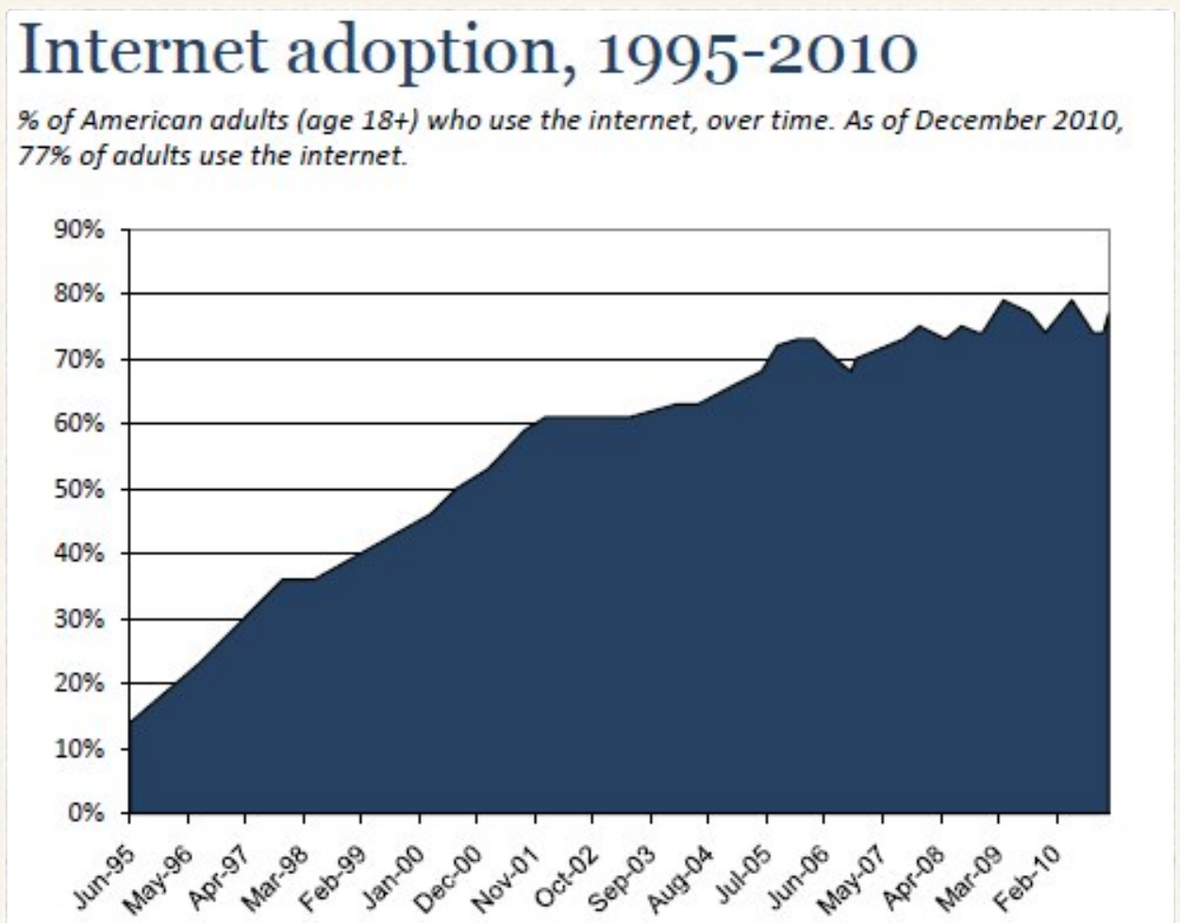
Digital inequality also recognizes that the inequality of digital access is influenced through these forms: technical (having the proper and up-to-date equipment and software to access); autonomy (where does the access take place? at home? at work? at school? is the device shared?); skill (how comfortable is the user with technology); social support (does the user have friends or family of whom questions can be asked); and purposes (reasons using [or not using]). Source DiMaggio (2004, 30-31) and Hargittai (2003, 10).



Internet Adoption

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Infographic Credit: http://pewinternet.org/Trend-Data/Internet-Adoption.aspx

Before turning to the suggested options to utilize the funding, I want to take another look at some research from the Pew Internet and American Life project. Let's revisit the Internet adoption graph. Obviously not everyone has adopted the Internet today, yet. The following statistics explain the picture of non-users.

Who is still not online?

- 21% of American adults are not online
- 34% of non-users have some past or current contact with Internet
- 10% of non-users want to use the Internet in the future
- 61% of non-users would need assistance getting online

Source: Rainie (2010)

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Who isn't online? The above statistics give a picture of what is going on.

What does this group look like?

- 8% **Digital hopefuls**: Like idea of being online, but lack resources; *Barriers*: cost and digital literacy
- 10% **Near converts**: High rate of computer ownership & comfort with ICTs; positive attitudes; *Barriers*: cost
- 10% **Digitally distant**: Lack of skills, resources, & negative attitude toward Internet; *Barriers*: cost, digital literacy, relevance
- 7% **Digitally uncomfortable**: have access means, but low comfort level & tepid attitudes toward Internet; *Barriers*: cost, relevance

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Source: Rainie (2010)

Here's a further picture of what the group looks like. The numbers don't fully add up (21% vs 35%), possibly because they're coming from different survey. Both come from a presentation given by the Director of the Pew Internet and American life project.

How to resolve the digital divide and digital inequality?

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After looking at what Internet adoption in America looks like, the factors surrounding the digital divide and digital inequality, and what non-users look like, how can we resolve the digital inequality? That is where this $50 million in funding will impact our state. The resolution to the situation is possible. What are our options?

Provided Options

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The State Superintendent for Public Instruction has already suggested several options as possible uses for this funding.

1. Install computers in all public libraries in the state and expand the hours when the computers are available.

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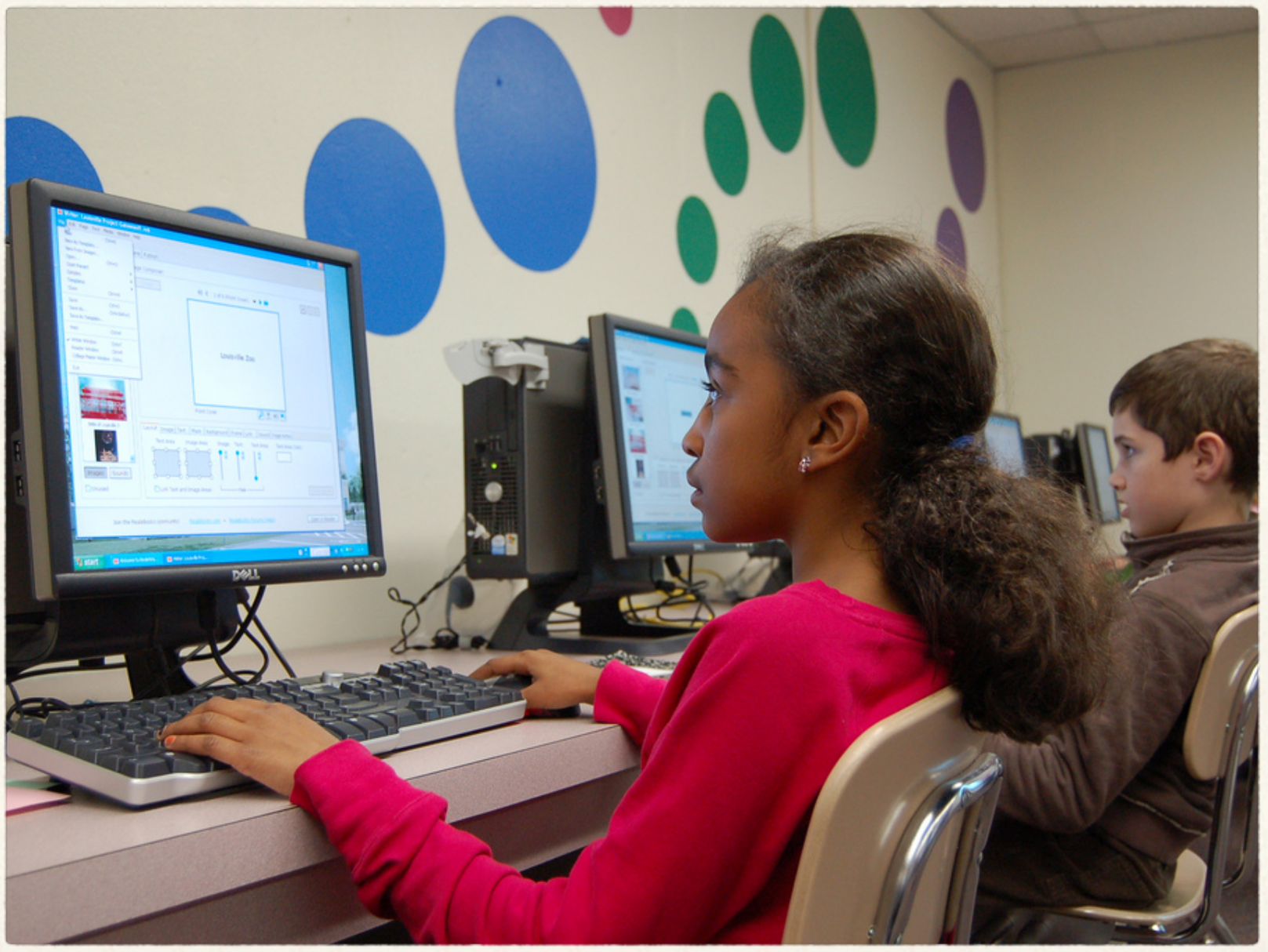
First, install computers in all public libraries in the state and expand the hours when the computers are available.



2. Expand staffing and other resources so that public schools can be open to the public after normal school hours, on weekends, and during the summer months.

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A second option is to expand staffing and other resources so that public schools can be open to the public after normal school hours, on weekends, and during the summer months.

3. Provide individuals in disadvantaged communities with computers.

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The third option is to provide individuals in disadvantaged communities with computers.

4. Provide high-speed Internet and mobile access for all state residents.

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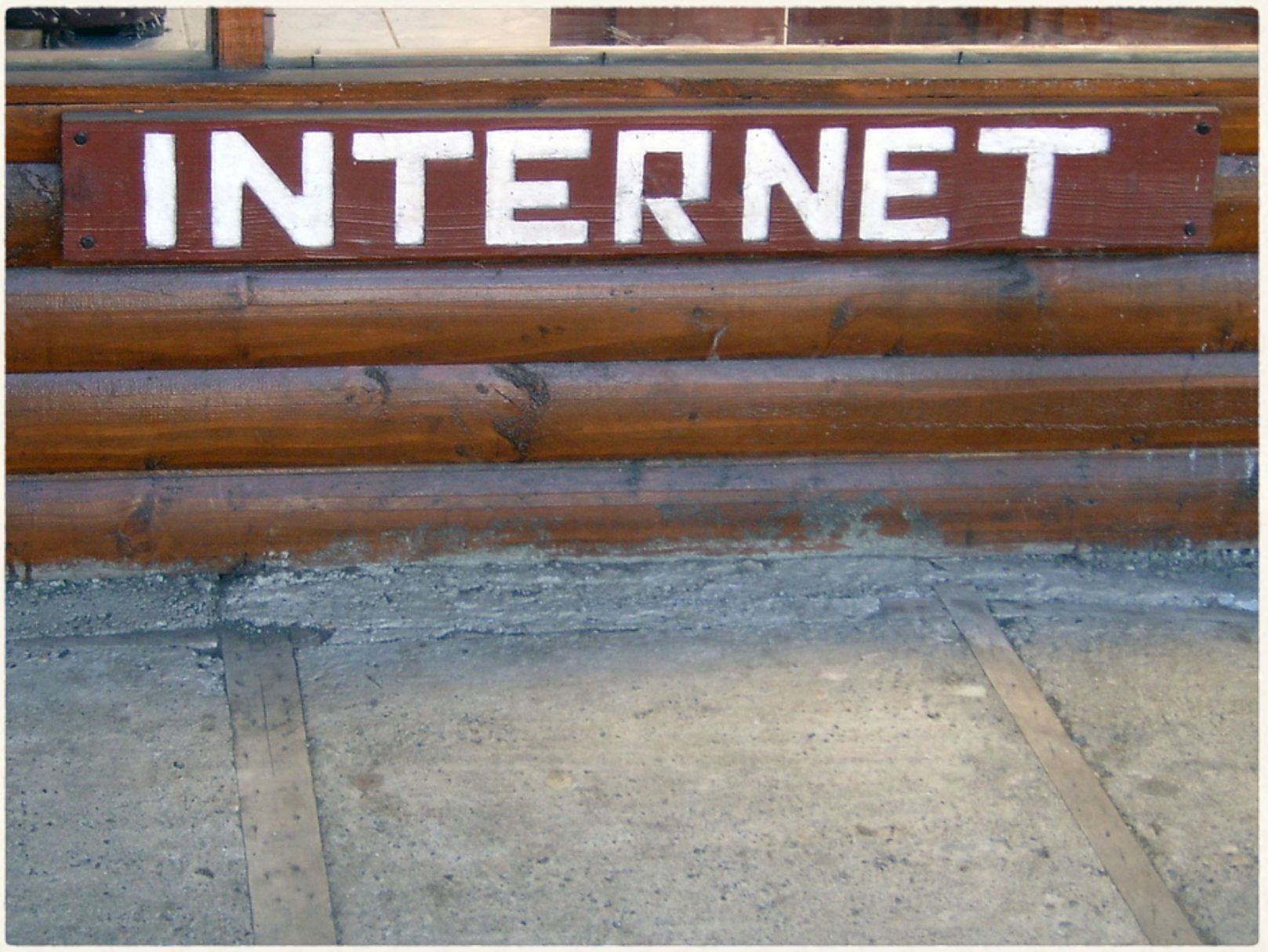
The fourth option is to provide high-speed Internet and mobile access for all state residents.



5. Subsidize Internet Service Providers to provide low-cost Internet to all state residents

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A fifth option is to subsidize Internet Service Providers to provide low-cost Internet to all state residents.

6. Provide information literacy courses to enhance computer skills and enable knowledgable use of digital technologies.

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The sixth suggested option is to provide information literacy courses to enhance computer skills and enable knowledgeable use of digital technologies.

7. Develop free online educational content, giving first priority to content most relevant to lower socio-economic groups before content that is relevant to the rest of the public.

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A seventh suggested option is to develop free online educational content, giving first priority to content most relevant to lower socio-economic groups before content that is relevant to the rest of the public.

Other Options

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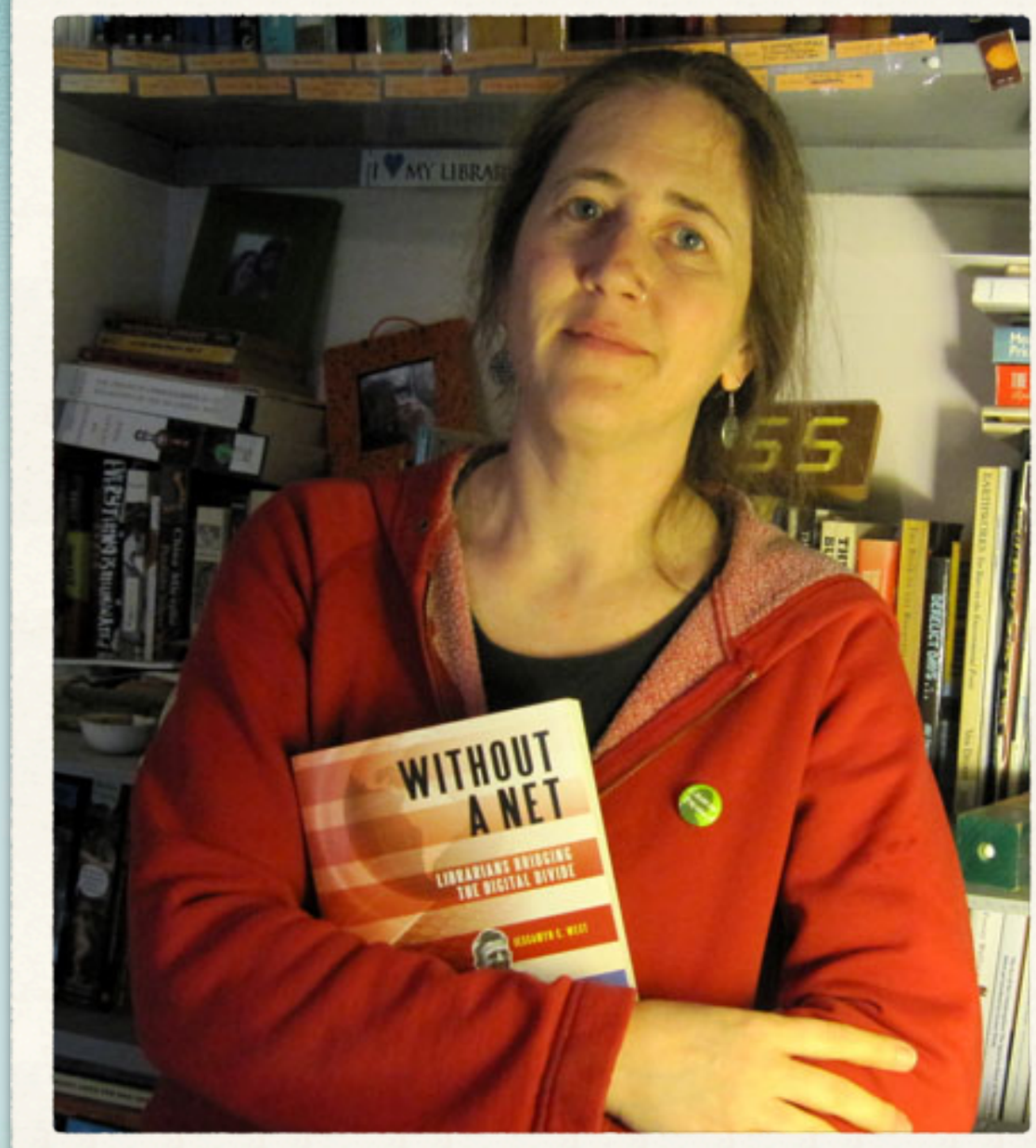
The State Superintendents suggestions are great possible alternatives to resolving digital inequality. I have also generated a couple of options of my own.



Without a Net (Jessamyn West)

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Photo Credit: http://www.flickr.com/photos/iamthebestartist/5753349703/in/set-72157594331879568 (Creative Commons)

Without a Net, by Librarian Jessamyn West (she blogs at www.librarian.net), is a brand new book out that examines how librarians are bridging the digital divide, and her book greatly impacted my thinking about the issues of digital divide and digital inequality. She describes her experiences as a rural technology trainer and her progress with her users, many of who are still very much in the “have nots” category of the digital divide. Other librarian success stories and suggestions are mentioned in the book. From the book’s suggestions, I’ve developed at least one possible solution.

1a. Provide funding for at least one full-time technology trainer in every county. If in an area of high population, more trainers could be hired.

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Information literacy courses were already mentioned as a possible option. However, I don't think the courses are enough. Someone needs to be formally be responsible for delivering the training, a trainer who isn't responsible for anything else. Each county should have at least one full-time technology trainer. If the population is high, more trainers could be hired.

1b. Provide equipment for this county-wide trainer to utilize. Class participants would also be free to BYOD (Bring Your Own Device).

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The trainer could utilize labs at libraries, community centers, or schools, but it would be beneficial for every trainer to also have equipment (mobile laptops, gadgets, mobile Internet connection) to be able to easily set up a mobile shop. Participants could also BYOD (Bring Your Own Device), so they're using what they're already familiar with.

1c. Locations of the training can vary across the county.

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This was hinted at already, but the training sessions could take place in the various “public squares” of the county: public libraries, public schools, community centers, and other venues.

2. Provide across-the-board high-speed mobile Internet access to the entire state, at a subsidized rate.

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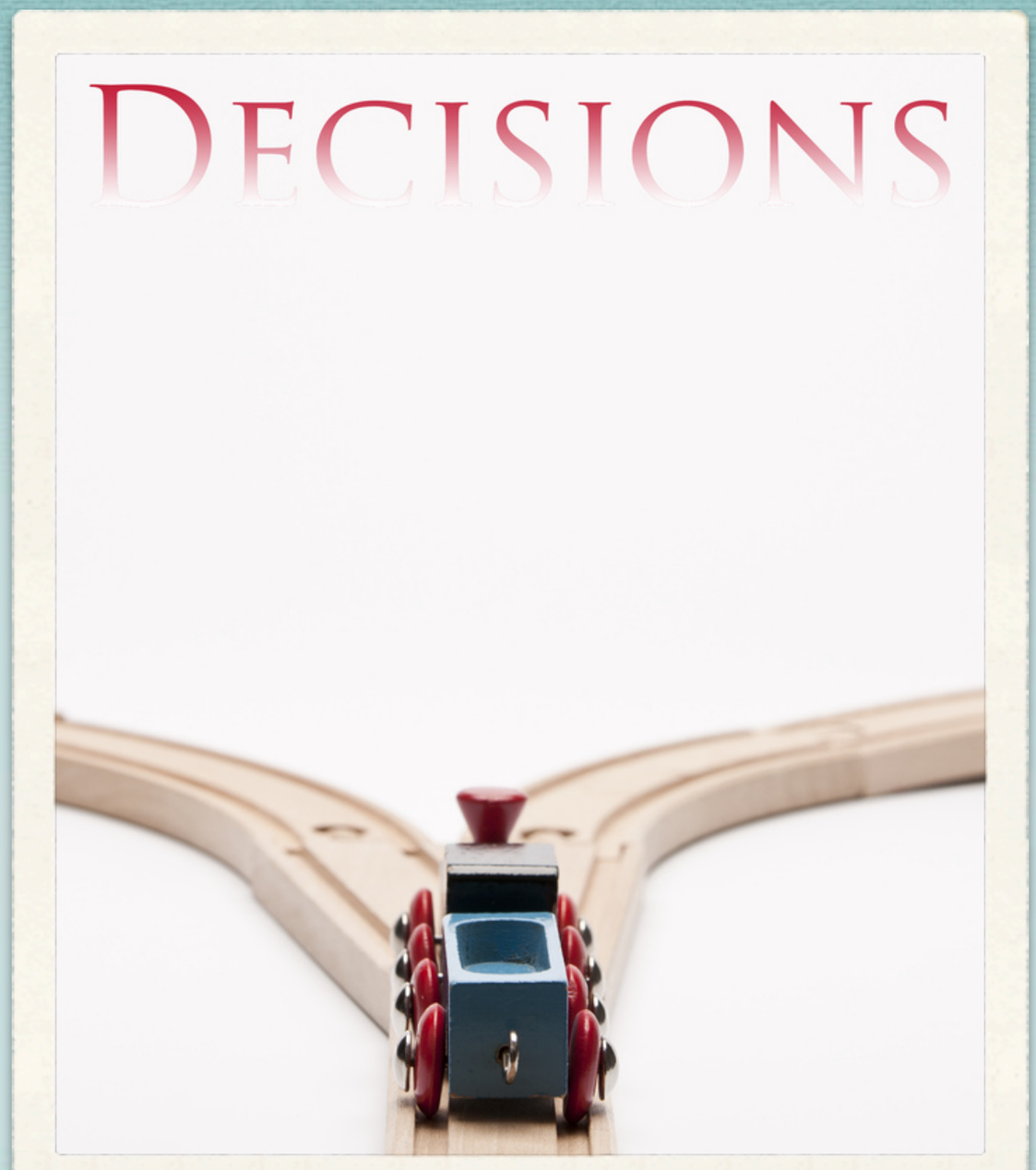
A second suggestion option would be to provide across-the-board high-speed mobile Internet access to the entire state, at a subsidized rate. I will go into further reasons for this suggestion in the recommendations session.



Recommendations

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After examining all the options, I'd like to make several recommendations on which options are the weakest options and which are the strongest options.

Weakest Options

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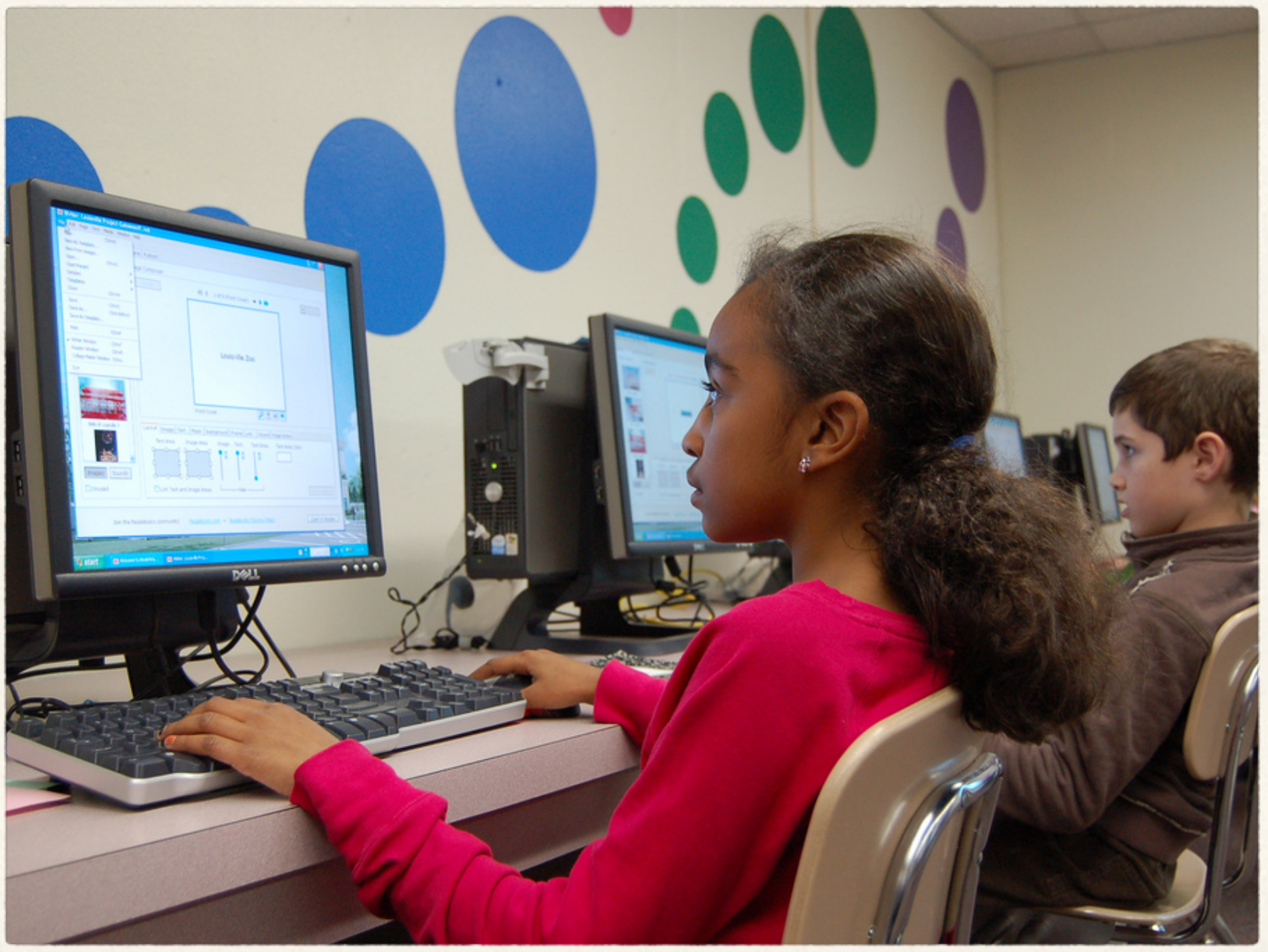
I want to first address what I see as the weaker options.



2. Expand staffing and other resources so that public schools can be open to the public after normal school hours, on weekends, and during the summer months.

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While school labs could be utilized and have been utilized successfully in several communities after hours, school computers tend to be more locked down than other organizations. Plus, the filtering service that schools typically employ would be an issue. Sites that people might want to access won't be able to be unlocked. IT departments at schools tend to balk at any outside user coming into the school. Safety concerns would be raised. Finally, school labs are intended for student use, not adult use. If the schools were opened extra hours only for the students, I could see the success of this option, but if the schools are being opened to everyone, there are too many roadblocks that would be raised to make this a viable option across the state. A few communities might be open to this option and could successfully implement it. But, as a statewide option, I do not see this one as feasible.

3. Provide individuals in disadvantaged communities with computers.

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This is a good option on the surface. However, once you begin to look at it in the lens of digital inequality, you can see its weakness. Providing computers to a group of people in a community who are already facing many disadvantages sounds like a great idea, but without also providing broadband access AND training, this is a very weak option. Also, the disadvantaged would be less likely to have a network of social support.

Finally, how would these people be selected? Who would provide the technology support when questions came up? Would software also be provided? Training?

Again, providing access is a great first step, but providing access isn't enough to overcome the inequality factors. A greater impact can be made on the community with the funding with some of the stronger options suggested.

4. Provide high-speed Internet and mobile access for all state residents.

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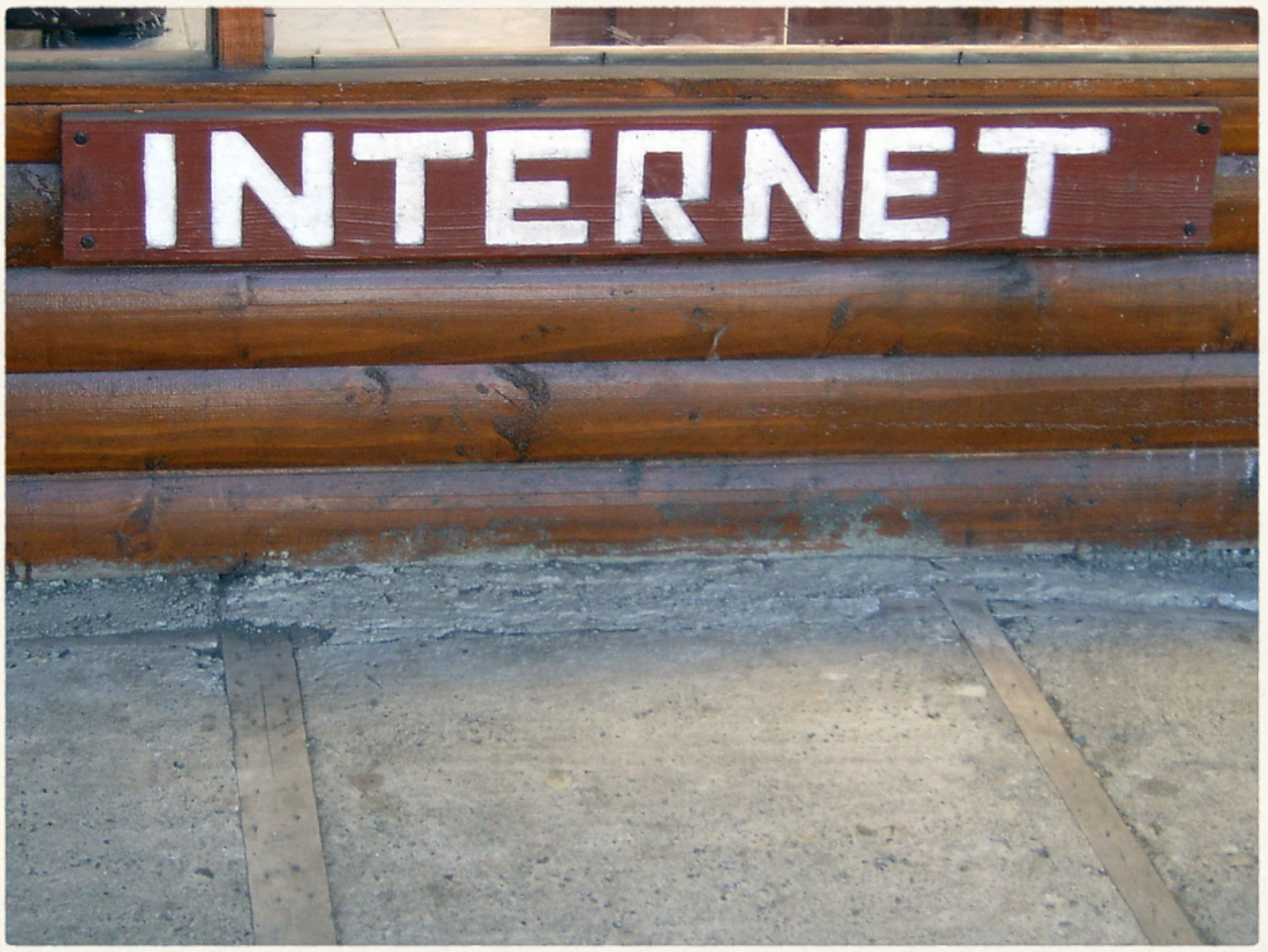
This option is similar to the last one. Providing Internet access is great, but what about the devices needed to access? How would training be delivered? Also, $50 million will not provide years of high-speed Internet and mobile access for all state residents. It is too costly.



5. Subsidize Internet Service Providers to provide low-cost Internet to all state residents

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Subsidizing ISPs to provide low-cost Internet to all state residents is a strong option in theory. But in order to deploy the suggested solutions you will see in a moment that address a wide variety of the reasons for digital inequality, and the length of time it would take to deal with every ISP across the state, it would not be feasible to deploy this option in a reasonable amount of time.

7. Develop free online educational content, giving first priority to content most relevant to lower socio-economic groups before content that is relevant to the rest of the public.

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Developing free online educational content with these funds, let along choosing who it will go out to first, is the weakest option of all. This is already being done independent of any organization, and does not need state funding to continue. Content is being created around the world every minute of every day. The money should instead be put toward teaching people how to locate this free content, through options already addressed.

Strongest Options

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Now, let's examine the strongest options for resolving the digital divide and digital inequality. In fact, I believe the best solution to addressing most of the factors surrounding digital inequality would be best served by implementing all of the strongest options.

1. Install computers in all public libraries in the state and expand the hours when the computers are available.

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Public libraries have been addressing the digital divide and digital inequality issues from the beginning, and public libraries are already present in most communities across the state. “Librarians are serving as “first responders” for the increasing number of people in need of technology training and online resources for employment, continuing education, and access to online government services” (Hoffman, 2011, 7).

Most libraries (71%) already provide their community’s only free public access to computers and the Internet (American Library Association 2010).

Example after example of how libraries are already serving their communities with Internet access can be found in the 2010 ALA State of Libraries report and the 2010 Opportunity for All report from the Gates foundation, IMLS, and the University of Washington.

One finding from the Opportunity for All report (2010): "Overall, 44 percent of people in households living below the federal poverty line ($22,000 a year for a family of four) used public library computers and Internet access. Among young adults (14–24 years of age) in households below the federal poverty line, 61 percent used public library computers and Internet for educational purposes. Among seniors (65 and older) living in poverty, 54 percent used public library computers for health or wellness needs” (3).

Libraries do not deal quite as well with the autonomy issue. Access can be limited, due to not enough computers available, the library isn’t open 24 hours a day, 7 days a week, and some sites may be blocked due to CIPA and eRate policies (but adults can ask for the filter to be turned off).

Overall, though, putting more computers into public libraries across the state and expanding library hours (and I might add adding wifi access where it isn’t already present), would be a great start to addressing digital inequality. Instead of creating a new infrastructure or new program, just provide some funding to the libraries to increase their hours and their computer offerings. Libraries know how to stretch their dollars, and they have already been addressing digital inequality for many years through access, equipment, support networks, and training.

Due to some of the weaknesses pointed out above, this should not be the only option deployed. Earlier, we looked at reasons why people aren’t on the web, and lack of digital literacy was a large reason (61%). Libraries have been teaching classes on a somewhat regular basis, but not all libraries are equipped for this ability. Other solutions must be deployed with this one. Let’s look at them.

6. Provide information literacy courses to enhance computer skills and enable knowledgable use of digital technologies.

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Teaching information literacy courses at various community venues across the state is a start to addressing the skill level and lack of social network support are good starting places. Teaching classes will begin to enhance computer skills and enable knowledgable use of digital technologies. “For many people, technology doesn’t become real until they’ve seen it, touched it, and maybe played with it a little” (West, 2011, 221). But who will teach these classes? Adding the next option to the mix will address this question.

1. Provide funding for at least one full-time technology trainer in every county, at $45,000 salary + mileage covered. If high population, more trainers could be hired.

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Providing a trainer for every county, independent of an organization, to cover technology training and digital literacy instruction will go a long way in addressing the lack of digital literacy skill that continues to come up in studies. “Part of being an effective instructor is about putting technology use into perspective for people and helping them find a place for it in their own lives as something other than an insurmountable obstacle” (West, 2011, 74). Lack of access, thanks to mobile phone adoption, isn’t as big of a concern as it used to be. It’s still there, but the National Broadband Plan and other programs are addressing access issues. Access to equipment is still a concern, but in the statewide scope of this project, access to training and more computers in every computer is the faster way to address digital inequality.

1b. Provide equipment for this county-wide trainer to utilize. Class participants would also be free to BYOD (Bring Your Own Device).

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The trainer will need his own equipment, to deliver the training.

1c. Locations of the training can vary across the county.

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Locations of the training can happen at health centers, community centers, colleges, schools, libraries, businesses, where ever the users are, the trainer can get to them, meeting the users where they are at. Drop-in times could happen.

2. Provide across-the-board high-speed mobile Internet access to the entire state, at a subsidized rate.

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As the $50 million allotment is limited, focusing on mobile Internet access, instead of Internet access would be the better approach. I say this because more people have cell phones (85% as of last year, according to Pew). Now, not all are Internet-capable, but phones are trending that way. Minorities and those with lower socioeconomic status also tend to have a cell phone and access the Internet that way. Addressing access inequalities through mobile adoption might also be a quicker way to address digital inequality.

Conclusion

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As the slides and options have shown there are several reasons for digital inequality and there are several options to addressing it. Furthermore, as The Knight Commission Report, The National Broadband Plan, the Opportunity for All report, and numerous other studies show, in order to function in today's democratic society, citizens must have digital access and knowledge to utilize it fully. People are using the Internet to make social connections, pursue education, apply for jobs, research health and wellness information, connect with government resources, and engage their community (Becker 5). Applying the suggested options I've made in our state will go a long way to successfully helping people affected by digital inequalities.

I think it would be good to end with two quotations that summarize the conclusions I've drawn.

"While traditional access-oriented thinking focused on questions related to measures such as ownership, availability, and affordability of infrastructure, now the focus is moving beyond technology to the users" (Karine Barzilai-Nahon 269)

and

"We must not confuse the thrill of acquiring or distributing information quickly with the more daunting task of converting it into knowledge and wisdom" (Technorealists, as cited in West, 2011, 227).

On the final two slides you will find my references.

Thank you.

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