Integrating Digital Literacy and Problem Solving into Instruction

Steve Quann - LINCS Educational Technologist / Director, EdTech Center @ World Education Tim Ponder - Assistant Project Director, LINCS Region 3

COABE 2016, Dallas April 13, 2016

This training was supported under the LINCS Regional Professional Development Center for Adult Education, PR/Award Number [V191B110002], administered by the Office of Adult Career, Technical, and Adult Education, U. S. Department of Education. However, the contents do not necessarily represent the positions of policies of the Office of Career, Technical, and Adult Education or the U.S. Department of Education, and you should not assume endorsement by the Federal Government.



Objectives and Overview

By the end of the workshop, participants should be able to:

- Explain why digital literacy and problem solving is important for adult learners
- Identify ways to support students' digital access
- Adapt lesson ideas that improve student digital literacy and problem solving skills

Introductions

- What is your position?
- Estimate the percentage of students who know the location of their library.
- Estimate the percentage of your students who know that their library has computers available to use.
- Estimate the percentage of students who have broadband access and use a desktop or laptop computer at home?

Digital Literacy and Problem Solving



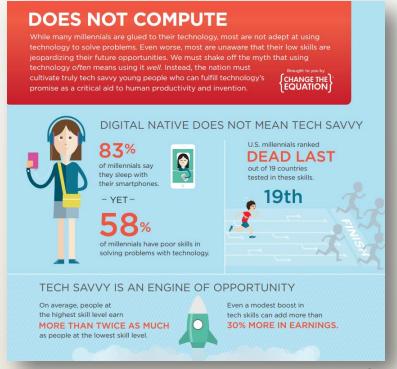
Digital Literacy and Problem Solving



More Info with Infographics

 See the infographics aggregated at www.piaacgateway.com





Integrating Digital Literacy & Problem Solving into Instruction

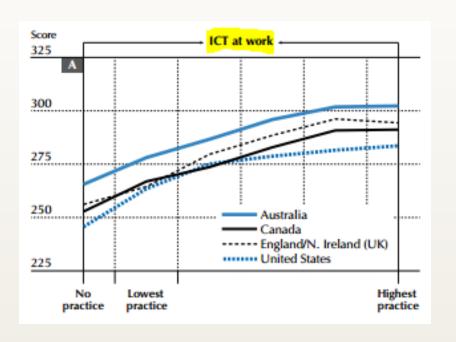
- Writing 6: Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
- Writing 7: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
- Writing 8: Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
- Reading 7: Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
- Speaking and Listening 2: Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- Speaking and Listening 5: Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

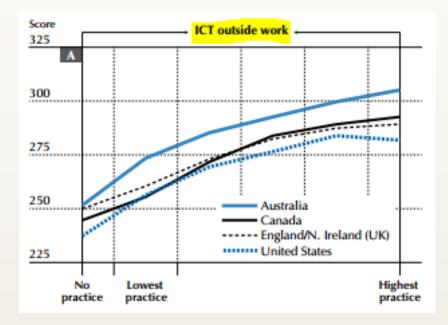
Importance of Digital Literacy Skills

- Workforce Innovation and Opportunity Act
 - See the Fact Sheet: <u>Integrating Technology</u>
- Research on opportunities by digital skill level
 - What's the Problem?
- The #HomeworkGap



Importance of Access and Use to Skills





Literacy & the Case for Access to Technology

Literacy is enhanced by digital literacy.

Digital literacy is improved by **practice**.

Practice is enabled by digital access.



Lesson Packet

Integrating Digital Literacy and Problem Solving into Instruction

Lesson Packet

https://lincs.ed.gov/professionaldevelopment/resourcecollections/profile-820

Digital Literacy and Access Needs



How Do You Access Needs?

https://docs.google.com/document/d/1Da-WrmI58n0ZDTYIGSZw9MftO_poOlmn4OV8yFs1eK8/edit

Tinyurl.com/ovntxsv



Assessment and Pre-Teaching

- Broadband
- Data plan
- Hotspot
- Mobile Hotspot
- Modem
- Router
- Wireless
- Wi-Fi
- 3G
- 4G
- GB (gigabyte)

Glossary

GLOSSARY

Broadband - high-speed internet connection on computer or mobile device (mobile broadband) that allows users to view videos, etc.

Data - the information (usually text, pictures, audio etc.) that you use on a computer or phone.

Data plan – a monthly subscription to a cellular or other wireless (See wireless.) company for the transfer of data such as audio, etc. It can be an unlimited-use plan or based on the actual amount of data used.

Hotspot - an area that has wireless signal for Internet available for use, usually public.

Mobile Hotspot - a personal device that creates a small area of Wi-Fi coverage (See Wi-Fi) allowing other nearby Wi-Fi devices to connect to the Internet.

Modem - a modem allows you to connect one computer to the Internet.

Router - a router helps you to connect one or more computers or devices at a time.

Wireless - a way of getting on the Internet without having to use a cable. The information is goes through the air, like with mobile phones.

Wi-Fi - a short-distance wireless communication system for communicating without wires over a computer network. This is can also be used with tablets and smartphones to connect to the Internet.

3G - a way that your phone can access the Internet by mobile broadband.

4G - newer than 3G mobile. It allows users to get very fast mobile internet.

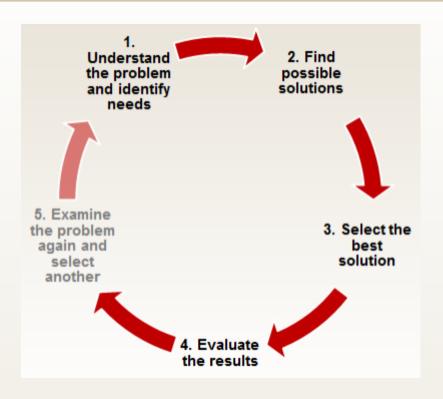
GB (gigabyte) – With 1GB of data plan you can visit 600 webpages or stream 165 videos or send 2500 emails.

For more information

Advanced: Tech Terms (http://techterms.com/)

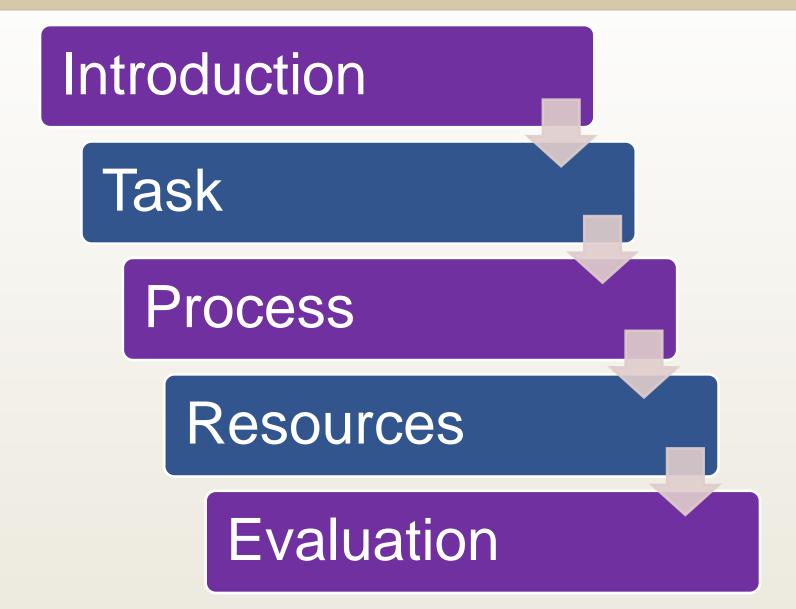
Beginner: BBC Webwise Making the Most of Being Online (http://www.bbc.co.uk/webwise/a-z/a/)

Helping Learners Problem Solve



Step 1:	Goal Setting
Step 2:	Planning, self-organizing
Step 3:	Acquiring and evaluating information
Step 4:	Making use of information
Ongoing:	Monitor progress

Framework for the project-based activities



WebQuests - Problem Solving Using Technology



Wouldn't you love to find a good job? What would you really enjoy doing? What are you qualified to do?

Here is your chance to explore different ideas and <u>prepare</u> yourself for a <u>career</u>. Some of you may already have jobs that you like. Others may need to go to school to get an education before getting your dream job. Maybe you need to find a job right now but do not have time to go to school. What kind of job can you do right now? This WebQuest will help you answer these questions.



You will be asked to do many tasks. You might already have some of the things that you are going to be asked to do. If you do, you can use this time to improve what you have already done. On the other hand, if you have never done any of the following tasks this is a great place to start.

<u>Education</u> and training are important steps in getting the kind of job you would like to have. You will need to figure out what kind of schooling you need and where to get it. Until then, what can you be doing now to earn money?

This WebQuest will help you figure out what you need to do to find a job. You will explore your talents. You will read about job apparturation. Finally, you will

Lesson 1: Libraries as one solution to the digital access problem

FINDING COMPUTERS - HANDOUT

INTRODUCTION

In this lesson, you will learn where a person can go to use computers for free. Most communities have places for this. The most common location is your local library. However, not everyone knows about this. Some people do not know where libraries are. People who are new to the area usually don't. Maria is new to the area and has this problem. Help her solve it:

Maria is new to the area. She works full time and is a single mother. This year, Maria is taking online courses. Her family has a desktop computer. However, her two children use the computer all the time. They do almost all their homework on it. Maria needs another computer, but she does not have the money to buy another one. Maria is not able to use the computers at her program.

THE TASK

What is the solution?

Find a library where Maria can use a computer. Then prepare directions for her.

THE PROCESS

- Read all these instructions and The Resources section.
- Using the Internet, find a library near your program. Use a search engine or links provided below in *The Resource* section.
- 3. Get information from the website about the library: What is the address? When is it open? How many computers are there?
- Next, you will need the directions. Use Google Maps to get directions. (See The Resources, below.) Enter your program's address as the starting point and then the new location as the destination

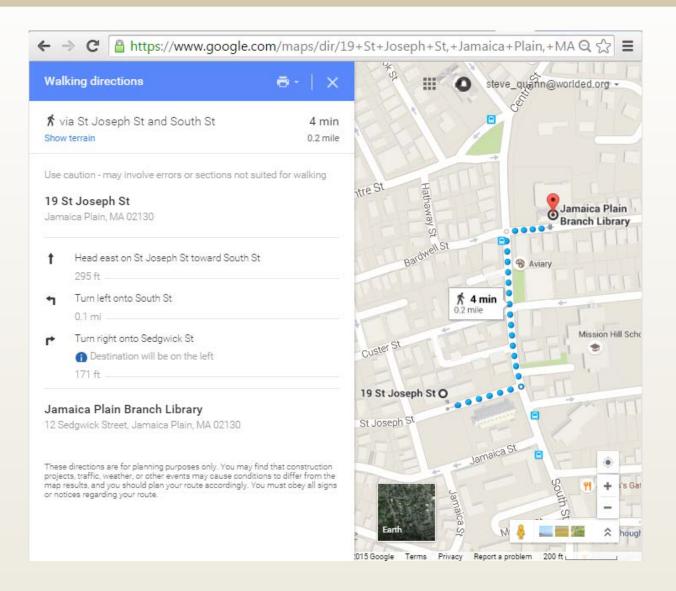
THE RESOURCES

- Search Engines: Google (https://www.google.com/) or Duck Duck Go (https://duckduckgo.com/)
 - o How to Use a Search Engine (http://digitallearn.org/learn/basic-search)
- Online Map: Google Maps (https://www.google.com/maps/)
 - How to use Google Maps.

Lesson 1: Finding Computers

- 1. How can you find out about computer and WiFi access at your library?
- 2. How do you get to the library?

Lesson 1: Finding Computers



FINDING COMPUTERS - HANDOUT

INTRODUCTION

In this lesson, you will learn where a person can go to use computers for free. Most communities have places for this. The most common location is your local library. However, not everyone knows about this. Some people do not know where libraries are. People who are new to the area usually don't. Maria is new to the area and has this problem. Help her solve it:

Maria is new to the area. She works full time and is a single mother. This year, Maria is taking online courses. Her family has a desktop computer. However, her two children use the computer all the time. They do almost all their homework on it. Maria needs another computer, but she does not have the money to buy another one. Maria is not able to use the computers at her program.

THE TASK

What is the solution?

Find a library where Mariacan use a computer. Then prepare directions for her.

THE PROCESS

- Read all these instructions and The Resources section.
- Using the Internet, find a library near your program. Use a search engine or links provided below in The Resource section.
- 3. Get information from the website about the library: What is the address? When is it open? How many computers are there?
- Next, you will need the directions. Use Google Maps to get directions. (See The Resources, below.) Enter your program's address as the starting point and then the new location as the destination

THE RESOURCES

- Search Engines: Google (https://www.google.com/) or Duck Duck Go (https://duckduckgo.com/)
 - a How to Use a Search Engine (http://digitallearn.org/learn/basic-search)
- Online Map: Google Maps (https://www.google.com/maps/)
 - How to use Google Maps.
 (http://media.wix.com/ugd/62b7e4_447a00da3b044d1bbfbc813d5932198e.pdf

Working with Problem Solving Complexity

Scenario:		Complexity Factor		
[Describe here]				
Prol	blem statement:			
[Describe here]		Explicit		Inferred
_	Number of online environments or applications [List them here]	One	Two	Three
y Factor	Familiarity of environments	Familiar		Novel
Intrinsic Complexity Factors	Number of steps [List them here]	Limited		Multiple
Intrinsic	Number of operators (e.g., running a sort function in Excel) [List them here]	One		Multiple
	Degree of monitoring Attending to progress toward goal	None		Some

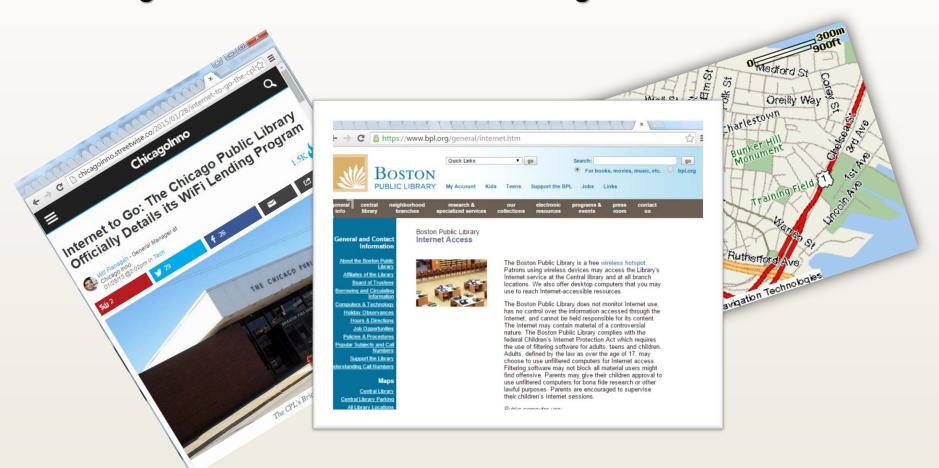
(Vanek 2016)

Additional ideas

- Direct students find their library information via <u>Public</u>
 <u>Libraries (http://www.publiclibraries.com/)</u>
- Instead of a search engine, have students use Everyone On.
- Use the Google Street View Feature.

Adapting Lesson 1: How would you do it?

What ways can language, math, and digital literacy skills be integrated into a lesson about using libraries?



Lesson 2: Public Awareness Campaign

PUBLIC AWARENESS CAMPAIGN - HANDOUT

INTRODUCTION

In this lesson, you will learn about special offers for technology that will get you connected to the Internet. Everyone On (http://everyoneon.org/adulted) is an organization working with the government. This non-profit organization offers inexpensive technology and Internet to adult education students. Most students do not know about these offers. The problem is: How can we tell others about this information?

THE TASK

What is the solution? Tell other adult education students about these inexpensive devices and high-speed Internet offers. You will need to:

- Collect more information on the Everyone On website.
- Create a flyer (or another communicate tool) that tells students at your program about low-cost offers available.
- . Share your product with the whole class and other students.

THE PROCESS

- 1. Get in a small group. Decide the work each member will do.
- 2. Read this document, including the evaluation on the next page.
- Think about your audience and what they need to know. Then go back to Everyone On
 <u>Adult Education (http://www.everyoneon.org/adulted)</u> and collect the information you
 need for your flyer.
- Go to the Resource section below and use the example flyer. Create your own or replace information and images.

Show your classmates and your instructor your first draft.

THE RESOURCES

Everyone On - Everyone On Adult Education (http://www.everyoneon.org/adulted)

Flyer Template (download and adapt) - Tinyurl Flyer Template (tinyurl.com/DLPSflyer)

PUBLIC AWARENESS CAMPAIGN - HANDOUT

INTRODUCTION

In this lesson, you will learn about special offers for technology that will get you connected to the Internet. <u>Everyone On (http://everyoneon.org/adulted)</u> is an organization working with the government. This non-profit organization offers inexpensive technology and Internet to adult education students. Most students do not know about these offers. The problem is: How can we tell others about this information?

THE TASK

What is the solution? Tell other adult education students about these inexpensive devices and high-speed Internet offers. You will need to:

- Collect more information on the Everyone On website.
- Create a fiver (or another communicate tool) that tells students at your program about low-cost offers available.
- Share your product with the whole class and other students.

THE PROCESS

- 1. Get in a small group. Decide the work each member will do.
- 2. Read this document, including the evaluation on the next page.
- Think about your audience and what they need to know. Then go back to <u>Everyone On Adult Education</u> (http://www.everyoneon.org/adulted) and collect the information you need for your flyer.
- Go to the Resource section below and use the example flyer. Create your own or replace information and images.

Show your classmates and your instructor your first draft.

THE RESOURCES

Everyone On - Everyone On Adult Education (http://www.everyoneon.org/adulted)

Flyer Template (download and adapt) - Tipyuri, Flyer Template (tinyuri.com/DLPSflyer)



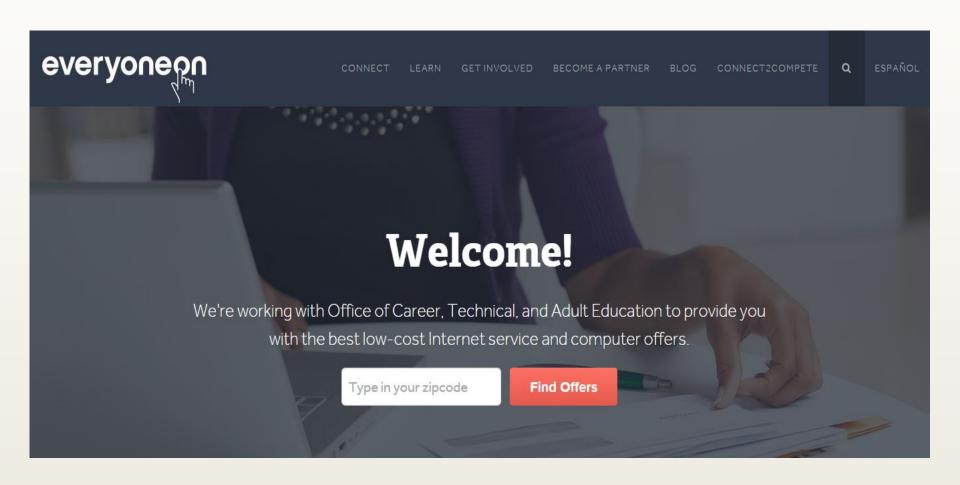
Everyone On

Let's get more devices in students' hands and households.

EveryoneOn.org/adulted

- Prequalifies for the best deal in the local area:
 - Students
 - Teachers
 - Programs
- Wireless internet service for as low as \$10 a month
- Refurbished tablets, laptops, desktops
- Downloadable materials:
 http://everyoneon.org/campaign-materials/

Everyoneon.org/AdultEd



Internet Offers

Internet Offers

Basic Internet

\$10.00 per month

EQUIPMENT

\$62.51

DATA

1.2GB at 4G speed, then unlimited at 3G for month

RESTRICTIONS

View Restrictions

Enroll Online

Enroll Online and receive 5% discount. For more information, or to order by phone, call (855) 270-3725.

Basic Internet

\$20.00 per month

EQUIPMENT

\$62.51 🔞

DATA

3.2GB at 4G speed/month; then unlimited 3G speed.

RESTRICTIONS

View Restrictions

Enroll Online

Enroll online and receive 5% discount. For more information, or to order by phone, call (855) 270-3725.

Data calculator

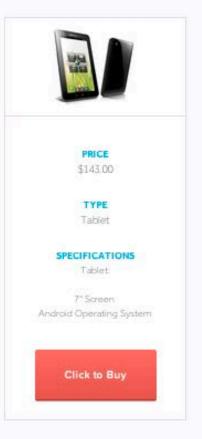
I Want to	1GB	12GB
Stream Video	165 videos	1980 videos
Stream Music	570 songs	6840 songs
Download apps, games, and songs	255 downloads	3060 downloads
Post photos and video	2850 posts	34200 posts
Go online	600 webpages	7200 webpages
Send and Receive Email	2500+ emails	30000+ emails
Make phone calls via Skype	1020 minutes	12240 minutes

Computer Offers

Computer Offers







Training Locations

Training Locations





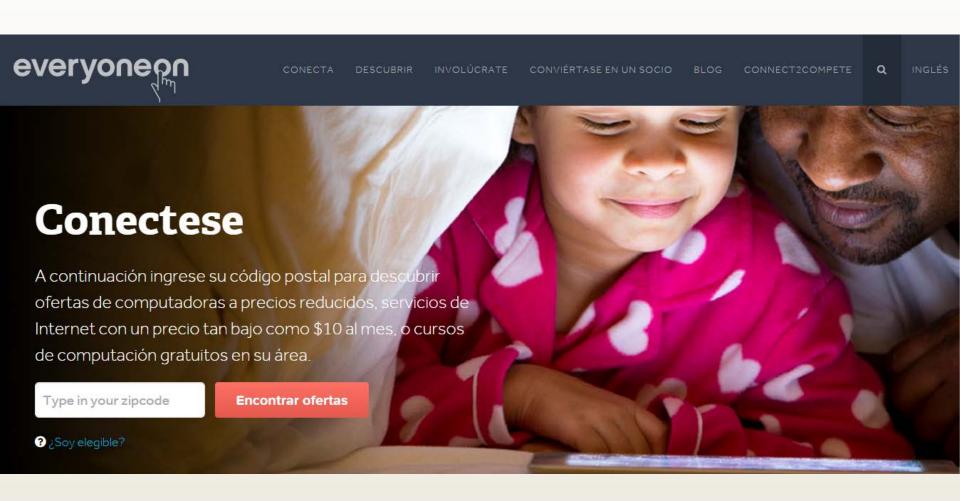








In Spanish



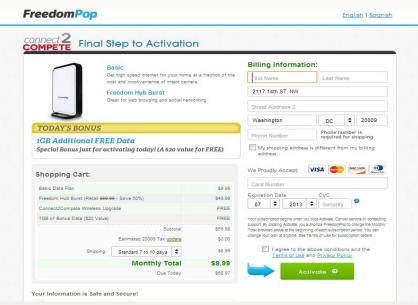
Additional Lesson Ideas

- Have more advanced students use a search engine to find organizations or companies (possibly in your area) that offer lowcost hardware and Internet.
- Tap local resources to present in class, such as computer recyclers etc.
- Ask students to review free training web sites and evaluate and select which one(s) they would like to promote at the school.
- Solve another problem: Where is free Wi-Fi? Have students go to a hotspot locator such as Hotspot Haven.
- Solve another problem: Compare hardware offers between two sites.

One Teacher's Experience

everyoneon.org/adulted

- √ connects classroom with real life
- ✓ students solve real problems
- ✓students get more independent
- ✓ provides an immediate impact:
- life gets better with free or low-cost internet
- √boosts confidence: students see that they can solve
 problems they have never dared to touch



One Teacher's Experience

"I did not know I could have a very cheap internet. It was easy to get it. My teacher showed me the site, and because my children get free lunch at school, I could have internet for \$10 a month! We are so happy!"

Patricia Rodriguez

I needed a computer for my daughter, but I did not know how to buy it. In class, my teacher showed us some information about computers and discounts for internet, and I understood everything. I did not choose the offers site, but I went to a different site and bought a computer for my daughter. I bought her a Surface! I have never thought I could do it on my own!"

Phlocia Romain

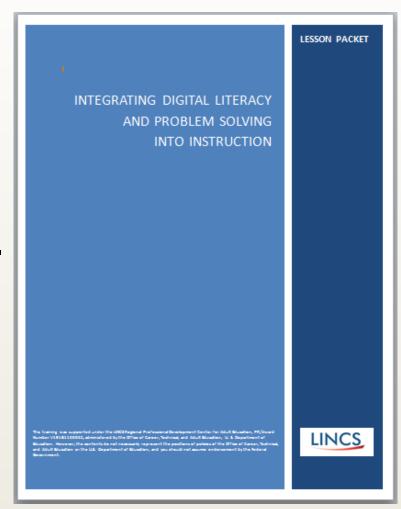


"Teacher, I need Internet and a computer to do my work in college and to look for a job. Can you help me, please?"

Junie Henry

Adapting to Lesson 2

- Review and then discuss how you would adapt Lesson 2 to your subject area, learners' levels, needs, tech skills.
- Be ready to report back to the whole group.



Next Steps

- What is one concept or lesson idea do you leave with?
- Are there ways in which you might adapt other aspects?
- Will you proceed independently or get support from computer coordinator?
- Are there ideas for the program itself, such as bulk internet adoption using Everyone On?

Questions or Comments



Why Should You Visit LINCS Regularly?

LINCS provides you with the information, resources, activities, and network you need to enhance your practice in order to provide your students with high-quality learning opportunities.



http://lincs.ed.gov/

LINCS is funded by the U.S. Department of Education - Office of Career, Technical, and Adult Education. It is comprised of the Resource Collection, managed by Kratos Learning, the Regional Professional Development Centers, and the Technical Contractor, Quotient, Inc.

LINCS Makes a Difference

How can LINCS help you with your work? It offers:

- A Resource Collection containing high-quality, evidencebased materials in 16 topic areas critical to the field
- An online Community of Practice where you can share knowledge and collaborate with your peers
- A Learning Portal where you can engage in self-paced and facilitated professional development courses
- Four Regional Professional Development Centers
 (RPDCs) that deploy evidenced-based PD trainings to states

Don't Miss a Beat; Create A LINCS Account

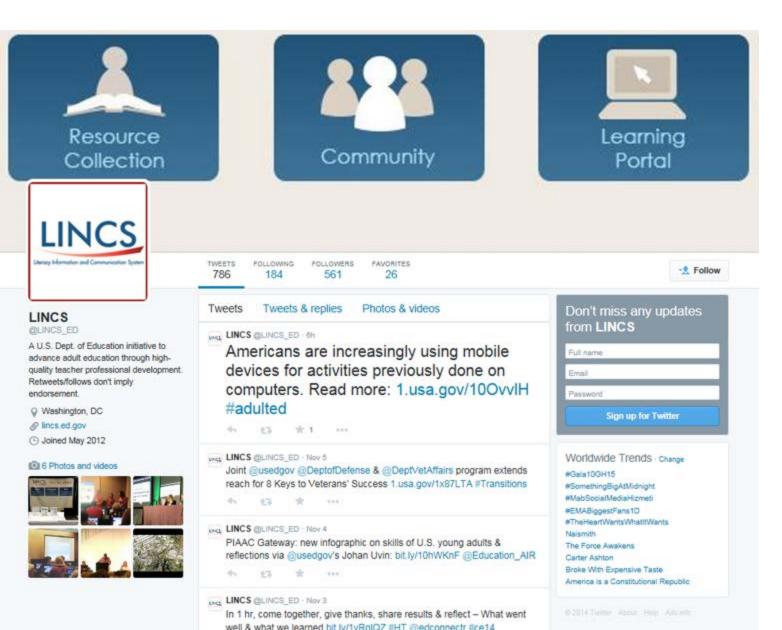
- Participate in the Community: https://community.lincs.ed.gov
- Access the Learning Portal: <u>http://lincs.ed.gov/courses</u>
- Search the Resource Collection: <u>http://lincs.ed.gov/collections</u>
- Follow the latest updates: @LINCS_ED
- Join our professional group: LINCS_ED
- Watch webinar archives and more: LincsEd







Follow Us for LINCS Updates



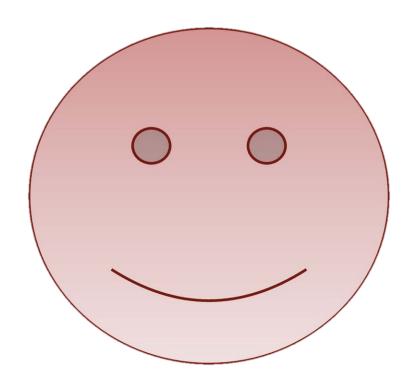




Join our group:

LINCS_ED

Thank You!



Evaluation and Contact Information

- Tim Ponder tponder@zhost.net
- Steve Quann steve_quann@worlded.org

LINCS Website: http://lincs.ed.gov/

LINCS Help: <u>info@lincs.ed.gov</u>