

# **Digital Literacy:**

## **A Guide for Adult Education Programs**

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## Digital Literacy in Adult Education Curriculum and Instruction

An essential component of the services of a high quality Adult Education (AE) program is the integration of digital literacy into curriculum and instruction. Providing opportunities for students to explore, experiment, and develop expertise using real world applications while building academic skills prepares students for success in our digitally-connected world.

This resource is intended for educators charged with enriching teaching and learning with digital literacy. While the benefits of digital literacy proficiency are too numerous to capture in this document, some immediate uses of digital literacy include:

- Extend ongoing and self-directed learning through a wealth of distance learning, online and other interactive multimedia that may accommodate a range of learning styles
- Prepare for success in postsecondary education, training, and to compete for careers with a family-sustaining wage
- Support caregivers and children in the use of digital literacy in the home and with family
- Identify community resources, engage more fully in civic activities and participate in our democracy
- Become part of an online learning community

## Rationale for This Document

ACLS defines digital literacy as: *the skills associated with using technology to enable users to find, evaluate, organize, create, and communicate information*. This definition derives from federal legislation, the Workforce and Innovation and Opportunity Act (WIOA) which recognizes a core purpose of adult education to prepare individuals with the skills and knowledge needed to succeed in postsecondary education and the workforce. Programs are required to not only develop students' academic skills with creative use of digital literacy tools, but to build the students' skill and confidence in becoming digitally literate.

Through the use of vignettes, illustrations are provided to show how some Massachusetts programs have successfully integrated some digital literacy tools and competencies into instruction. A vignette illustrating how one director overcame teachers' resistance to using digital literacy tools in the classroom is also included.

For a wide range of reasons and given their varied circumstances, programs are in different stages of integrating digital literacy into curricula and instruction. Many adult learning programs are successfully integrating digital literacy skills into all levels of instruction. Typically, these programs are well-resourced with updated technology, trained staff, and classes that help prepare students for using technology in their ABE and ESOL classes.

Currently, many programs are using a wide variety of devices to accomplish tasks related to content-based instruction. These programs, for example, integrate technology into reading and writing assignments, use video resources to enhance content, and use mobile devices to improve writing skills by communication via e-mail or through texting. To prepare students for their next steps in college and career readiness, technology is frequently used in project-based approaches in which students use tools to locate information, conduct research, create and share presentations with one another, and provide feedback to improve subsequent presentations.

Teachers and directors reporting the most success in integrating digital literacy into their classrooms and programs display a sense of curiosity around technology, asking questions like: What can I do with this application? How can I begin to improve the effectiveness of learning with technology? How do I select and incorporate multimedia applications into lesson planning? How can I learn from my colleagues and the students

themselves about what excites them and what works? What are ways to assess students' comfort level and skill level with new technology? Above all, teachers select tools and devices that do not distract from but augment the overall purpose of the curriculum and instruction.

At the same time, programs that remain under-resourced face a number of challenges. For example, veteran teachers may be challenged as to how to acquire digital literacy skills needed for teaching 21<sup>st</sup> Century skills. Other staff may be hesitant to master new skill sets and alter their instructional approaches. Students also represent a range—from those who embrace technology with enthusiasm to those who may resist using technology tools as part of their learning.

Alternatively, many programs have taken proactive approaches to increasing the digital literacy skills of staff and students. Some have used professional development time to focus on digital literacy, on researching and testing digital literacy tools, and finding ways to augment learning by their use.

Teachers and Directors may find this document useful as a springboard to develop their own ideas for integrating technology tools into curriculum, instruction, and lesson planning. Staff developers may use this as one resource to develop ideas for the professional development needs of the program.

### **A Standards-Based Approach to Curriculum and Instruction Calls for Digital Literacy**

The MA AE system is built on standards in which curriculum, instruction, and assessment are aligned. These standards identify what students need to know and be able to do to succeed in the workplace, in postsecondary education, and in training. The [\*College and Career Readiness Standards for Adult Education\*](#) (CCRSAE) are research-based and informed by employers' and postsecondary representatives' assessment of what adults must know and be able to do to succeed in these areas. The standards describe skills that are critical for all students, including low-level ABE students and English language learners.

Indeed, the cross section of panelists, including representatives from adult education, community colleges, career and technical training, and the military that contributed to the development of the CCRSAE identified what employers and educators will actually demand of future employees and students. Numerous CCRSAE specifically reference the use of technology in instruction. For example, Writing Anchor 6 states: *Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.* Reading Anchor 7 states: *Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.* In addition, Speaking and Listening Anchor 5 states: *Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.*

ESOL programs develop curricula emphasizing the academic skills of reading, writing, speaking, and listening aligned with the benchmarks in the [\*Massachusetts English Language Proficiency Standards for Adult Education\*](#) (MA ELPS). It's essential also that an ESOL curriculum integrates digital literacy. The ESOL-related vignette included in this document reflects the use of digital literacy and its alignment with the MA ELPS.

### **How Was the Document Developed?**

The document was developed by a digital literacy work group comprised of Massachusetts Adult Education teachers, adept at aligning instruction with the CCRSAE and integrating digital literacy into instruction. (ACLS staff also participated in the work group.) Teachers contributed examples of classroom practices that align with the CCRSAE to illustrate digital literacy competencies employed in various AE instructional levels. These stories were developed into illustrative “vignettes” to give readers a view of digital literacy in practice. Also

included are some selections from the teachers' own digital literacy professional development practice. We hope that the vignettes offered here will spark ideas for programs to begin or expand the use of digital literacy tools into their own teaching and learning. Although ACLS does not mandate the use of any particular digital literacy tools, just as ACLS does not prescribe certain teaching methods, programs must support the digital literacy development of students. It is expected that teachers will determine how to best incorporate digital literacy into curriculum and instruction. The vignettes suggest several ways this can be accomplished. Teachers will find the possibilities to apply technology in ways that connect with student needs and interests are virtually limitless.

## **Resources**

Researching online resources can take up a disproportionate amount of a teacher's prep time. The resources offered in this document have been identified as useful by classroom teachers who have used them successfully in their classes.

## Vignettes Illustrating Digital Literacy Competencies

The following vignettes, drawn from real-life experiences in the classroom, illustrate how some teachers are integrating digital literacy into instruction. To the right of each vignette are the Anchor and Level Specific Standards that guided the development of the teacher's lesson. At the conclusion of each vignette are the digital literacy competencies integrated into the lesson.

We hope these stories will provide ideas and resources as you to continue to uncover and experiment the digital literacy tools and resources best suited for your students.

### Promoting Confidence in Digital Literacy: Creating a Word Cloud



Teachers can promote students' digital confidence by carefully integrating digital learning activities into their overall teaching goals. Low-key activities can reduce students' anxiety with technology and promote willingness to experiment with new digital literacy skills for more academic purposes. The following vignette illustrates the use of an engaging activity to promote learner confidence while enhancing basic digital literacy skills.

One teacher in an adult career pathways program (with students at EFL Low Intermediate ESOL through Advanced ESOL Levels and at High Intermediate Basic Education Level) had been teaching basic word processing skills over several weeks. Skills included creating new documents, using font features, and inserting photos. The class worked on evaluating and citing resources around health issues. The class reviewed the differences between nonprofit (.gov or .edu) and commercial (.com) sites and explored the difference in their underlying purposes.

At the end of the cycle, students were assigned to complete a research project on a health issue of their choice. The project was intended to display new content knowledge as well as mastery of beginning digital literacy skills. The teacher guided the students to sites trusted by teachers: the Centers for Disease Control and Prevention, the National Institutes of Health, and specific disease associations, such as the Alzheimer's Association. Students compared the information on these sites to that on a commercial site, such as a drug company. While incorporating CCRSAE level-specific standards and instructional shifts, the teacher also wanted to add an interactive tool for students to use that would allow them to insert some of their own creativity into a culminating research project.

To increase students' comfort and facility with their new online skills and to encourage practice through experimentation and play, the teacher asked students to create a word cloud in the final project submission. A word cloud is an image, generated by a website like Wordle, where words increase in size according to their importance in a piece of text. The teacher directed the students to the Tagxedo site ([www.tagxedo.com](http://www.tagxedo.com)), one of many sites available to create word clouds. She chose this site because of her own

#### Connection to CCRSAE-Anchor and Level-Specific Standards

- **Reading 4:** Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
  - **Level C-**Determining the meaning of general academic and domain-specific words and phrases in a text relevant to a topic or subject area. (RI.5.4)
- **Writing 7:** Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
  - **Level B-**Conduct short research projects that build knowledge about a topic. (W.3.7)
- **Speaking & Listening 5:** Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
  - **Level C-**Include multimedia components and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (SL 5.5)

comfort level with it—an important factor in selecting any application or activity for the classroom. She asked each student to create a word cloud and to save it for the final project. Students practiced using the mouse by pointing, clicking, dragging, dropping, and saving, while developing increased comfort using the keyboard and mouse while creating a final product.

Creating a word cloud showed students that they could experiment with a new digital tool. Students agreed that the practice in creating word clouds increased their confidence in using the mouse, keyboard, and online learning tools.

Some students took their enthusiasm for word clouds home. They introduced the activity to their children who enjoyed creating cards and t-shirt graphics, thus promoting family digital literacy—an unexpected and welcomed outcome from the project.

Competencies	Related Skills
Displays understanding of digital literacy concepts and vocabulary	<ul style="list-style-type: none"> <li>• Uses a mouse pad</li> <li>• Demonstrates beginning level keyboard skills</li> </ul>
Uses basic toolbar and scrolling features	<ul style="list-style-type: none"> <li>• Opens and closes applications on the computer</li> </ul>
Searches for and locates information and resources online	<ul style="list-style-type: none"> <li>• Chooses browser</li> <li>• Displays understanding of browser toolbar button</li> <li>• Displays understanding of URLs and links</li> </ul>

### Resources

Centers for Disease Control and Prevention - [www.cdc.gov](http://www.cdc.gov)

National Institutes of Health - [www.nih.gov](http://www.nih.gov)



## Understanding Copyright and Fair Use in a Low-Level ABE Class

When can someone freely make use of material they find online? When are these materials restricted by copyright laws? These distinctions can be confusing for students as they encounter the increasingly rigorous demands of the CCRSAE in their research and writing.

An ABE teacher (with students at EFL Low and High Intermediate Basic Education Levels) developed a unit to help students understand the concept of copyright and fair use after discovering that some students borrow freely from the Internet, often without regard to copyright.

### Understanding Copyright and Fair Use

To introduce the lesson, the teacher explained that the creator of a piece of writing, art, photography, music, etc., has certain rights and protections (copyright). However, despite those rights, there are times when the work—or part of the work—may freely be used by someone else (fair use). [For more information about copyright and fair use, please see the resources listed at the end of this vignette.]

To help students when fair use allows a copyrighted work to be freely used, the teacher gave students summaries and pictures from several copyright court cases. Students learned how the court applied the fair use standards and rules in each case. While the teacher adapted the text to reflect the instructional reading level of his students, the content of the summaries included complex text and academic language—an important instructional shift underlying the CCRSAE.

### Obama “HOPE” Poster

The teacher gave students the iconic Obama “HOPE” poster case to study. In this court case, the Associated Press (AP) wanted compensation from the artist.

Students were divided into groups and assigned roles: advocate for the representative of the Associated Press and representative of the court. Each of the principal groups presented arguments for and against a violation of copyright.

Then the group of students representing the court ruled on the case. Afterward students debriefed and each wrote a summary—using basic word processing skills to draft, revise, and edit their pieces—addressing the following questions: Did students agree or disagree with the court’s ruling? What was learned about copyright and fair use? How would the new information apply to an upcoming project requiring research?

### Challenges

Although the teacher provided examples—through his explanation and the court cases he presented—that profiting or not profiting from the use of copyrighted material has no bearing on whether or not the use is a fair use, students continued to believe that any nonprofit use of images found online is allowed. They thought that if they were not making money off the image, it was permissible to use it. Students also continued to believe that any image found on Google Images may be used in any context despite the clear disclaimer on the images that someone may hold a copyright.

### Connection to CCRSAE-Anchor and Level-Specific Standards

- **Reading 1:** Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
  - **Level C:** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. (RI/RL.4.1)
  - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (RI/RL.5.1)
- **Reading 7:** Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
  - **Level D:** Integrate information presented in different media or formats (e.g., in charts, graphs, photographs, videos, or maps) as well as in words to develop a coherent understanding of a topic or issue. (RI.6.7)

The teacher realized that students needed to learn more about copyrighted and fair use material beyond the introductory lesson. As a follow up, he introduced the requirement that attribution of outside materials be included in every student-developed product, and that the issue of copyright/fair use is addressed in any narrative with the project. This allows for multiple rounds of feedback on copyright and fair use and gives students practice in writing citations. In addition, he plans to create a poster that summarizes the information so that students can use it as a quick reference.

### Outcomes

Because of the teacher's willingness to press on with these distinctions, students increased their understanding of copyright protections under the law—especially that the creator of a work (art, text, photograph, and video) has certain rights and that using the work without permission may violate those rights. Along the way, students increased their digital literacy–related vocabulary terms, such as infringement, public domain, digital copy and Creative Commons, which are free copyright-licenses. Students actively applied their understanding of these terms when they participated in the role-plays and wrote their summaries.

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Competencies	Related Skills
Displays understanding of digital literacy concepts and vocabulary	<ul style="list-style-type: none"> <li>• Uses a mouse pad</li> <li>• Demonstrates beginning level keyboard skills</li> </ul>
Creates products and content using digital tools and software (Writing Focus)	<ul style="list-style-type: none"> <li>• Displays understanding of plagiarism and need for citations.</li> <li>• Displays understanding of Copyright and Fair Use</li> </ul>

### Resources

“Five-Minute Film Festival: Copyright and Fair Use for Educators” <http://www.edutopia.org/blog/film-festival-copyright-fair-use> - Short video showing middle school students displaying understanding of copyright and fair use.

“The Educator’s Guide to Copyright and Fair Use” - [www.educationworld.com/a\\_curr/curr280.shtml](http://www.educationworld.com/a_curr/curr280.shtml) - This five-part series covers a range of legal issues for teachers.

## Understanding the Consequences of Digital Footprints

A student's online presence in social media can affect him or her in unintended ways. A full understanding of how a digital footprint is created—and what consequences that footprint can have on a student's personal, professional, and educational life—is an important topic for teachers to cover in their classes.

### Facebook Exposure

The teacher approached the topic of digital footprints after a particular incident occurred in her ABE class. The students (EFL High Intermediate Basic Education Level) had been deeply engaged in a book, *I Don't Wish Nobody to Have a Life Like Mine: Tales of Kids in Adult Lockup*, by David Chura. Several students asked the teacher if Mr. Chura had a Facebook account; they were interested in communicating with him about the experiences he recounted in the text. The teacher located his account, and the students sent him friend requests. When the author received the requests, he accepted most of them. However, he initially did not accept one of the requests, by a student with a very revealing Facebook photo. When Mr. Chura learned that this person was one of the ABE students reading his book, he brought the account photo and the issue of professionalism to the teacher's attention.

### Learning about Digital Safety

This incident became a teachable moment. The teacher shared the author's feedback with her students, who then asked if there was any way to separate personal and professional presentation in an application like Facebook. The class then researched the differences between private versus public sharing on Facebook; they deepened their inquiry to examine what material is always public and what material can be made private. This included a review of default settings and the ease or difficulty with which these settings can be altered. Most of the students had little or no exposure to the idea of presenting oneself professionally, no matter what the context.

After learning about digital footprints—the personal history of one's Internet use—students had a deeper understanding of online professionalism and social etiquette—important elements in career exploration and employment searches. Students considered their public presence on social media and what prospective employers (or anyone else) might find there. As in the case with the revealing Facebook photo, they recognized that without the proper settings, material intended only for friends could actually be available to a larger, unintended audience. The teacher also explained that Facebook is only one of many applications where an understanding of one's digital footprint and personal presentation is important. Any linked account (for instance, any account that asks you to log in with Google, including Snapchat, Instagram, and Twitter) retains a history of use. With this new knowledge, the class reviewed older (pre-digital literacy) concepts like: "You never get a second chance to make a first impression."

Effective and professional personal presentation is an important employability skill. As our outcome measures are tied to WIOA, helping students recognize and act on this idea is increasingly

### Connection to CCRSAE-Anchor and Level-Specific Standards

- **Writing 6:** Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
- **Level D:** Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources. (W.7.6)
- **Writing 7:** Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
- **Level C:** Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (W.5.7)
- **Speaking and Listening 1:** Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own.
- **Level D:** Acknowledge new information expressed by others, and, when warranted, qualify or justify their own view in light of the evidence presented. (SL.8.1)

important. For example, students often need to apply for jobs online, and their online cover letters are the first impression they make to prospective employers. Observing email etiquette in the workplace and recognizing the difference between texting a friend and a supervisor are important workplace skills.

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Competencies	Related Skills
Uses social media effectively and safely	<ul style="list-style-type: none"><li>• Recognizes consequences of public accounts such as Facebook</li></ul>
Considers safety, privacy, appropriateness and digital footprint before using digital tools	<ul style="list-style-type: none"><li>• Chooses appropriate privacy and other settings</li></ul>

**Resources**

“Digital Footprints: What Kind of Mark Are You Leaving?” - [www.smores.com/xta5u-internet-safety](http://www.smores.com/xta5u-internet-safety)

## Creating Portfolios Using Google Tools in an ASE Class

A well-equipped adult learning program with strong technical support and an appreciation for digital literacy can help instructors integrate digital literacy skills into their teaching. One large ASE/ESOL program illustrates the value of ongoing training and support for staff, which benefits students at all levels. Access to technology at this center is excellent: teachers can reserve a computer lab for teaching or reserve laptops and iPads for use in class; a tech coordinator facilitates regular staff trainings.

To ensure that students are prepared with basic computer skills, the program requires that all students (EFL High Intermediate Basic Education Level) enroll in a basic skills class when they first enter the program. In that class, they receive instruction on setting up a work/school Gmail account. Students become accustomed to checking that email regularly for school-related announcements, cancellations, and assignments. Because of these expectations, by the time students arrive in any teacher's class, they have internalized a routine for using email in their school setting. This helps each teacher move further along with more complex tasks via Google.

Each teacher in the ASE program receives training in using Google—not just for the basics, but also in integrating complex learning tasks. Staff trainings are a regular feature. As a result of the trainings, teachers develop competence—and confidence—in guiding students to create a portfolio of class materials on Google Drive, including essays, resumes, cover letters, and any other written work that is assigned. As a result, students begin practicing the skills they will need to complete postsecondary work and to explore career paths.

### Using Google Tools in a Health Unit

To help students practice drafting, revising, and saving their written work digitally, one teacher introduced Google Drive to her students at the beginning of a health unit. She asked students to complete a writing assignment that described a visit to the doctor, and she provided prompts for the students to follow. She wanted to:

- start a conversation about the health care system in the U.S.;
- instruct students in drafting, revising, and editing a piece of writing, and
- demonstrate Google Drive's utility in helping with sharing documents, receiving feedback, and making revisions—all tasks students will need to do in a higher-education setting.

Further, the teacher recognized that HSE students need to complete a timed writing portion of the HSE test solely on the computer.

### Step by Step

The teacher's direct instruction began with the basics: how to begin a document in Google Drive—(in this case, the doctor's visit), how to invite the teacher to view and edit the work, how to view teacher comments, and how to respond to teacher comments within Drive. Once students uploaded their documents, the teacher

### Connection to CCRSAE-Anchor and Level-Specific Standards

- **Writing 4:** Produce clear and coherent writing in which the development, organization and style are appropriate, and style are appropriate to task, purpose and audience. (W.5.4)
- **Writing 5:** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
  - **Level C:** With guidance and support from peers and others, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach (W.5.5)
- **Writing 6:** Use technology, including the internet, to produce and publish writing and to interact and collaborate with others.
  - **Level C:** With some guidance and support, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; ... (W.4.6)

told them to expect teacher responses within 24-48 hours and reminded them that they could go into the Drive to review comments and suggestions at any time.

### Challenges

The teacher's biggest challenge was convincing students that their documents are safe on Google Drive. She explained that there was no need to print out hard copies or store the documents on a flash (pen/thumb) drive. Getting students to trust the technology and try out new tools is a big step toward easing the path to higher education and employment training. Students gradually came to trust using Google Drive when they saw, over time their files were still where they placed them.

The teacher also discovered some initial resistance to writing first drafts on the computer. Many students preferred writing out their drafts on paper, then transferring them to "final drafts" in Google Drive. However, the more students gained experience with Google Drive, the more they saw the advantage of composing directly into a document.

### Patience

The teacher did not force the students to compose on the computer right away, and her patience allowed students to develop their confidence level and move away from pencil and paper drafts on their own time.

As a result of using Google Drive, students learned skills to create a body of work that is accessible anywhere they are able to get online—using a phone, iPad, laptop, or desktop. This work can travel with them beyond the program. Students do not have to worry about losing their work, as they do with a flash drive, or other external storage device. Students gain confidence in using Web 2.0 tools, which are critical 21<sup>st</sup> Century tools.

### Beyond Bells and Whistles

This teacher describes herself as digitally confident; she can't wait to try out new digital tools when she hears about them. She takes time to experiment with the new tools, see how they work, and identify uses (if any) for the classroom. However, she recognizes that she cannot force a fit with tech tools when there isn't one, as fun as a new app might be for her! This instructor's thoughtful approach illustrates how good teachers select digital literacy tools in service to instructional goals, not just to implement the newest bells and whistles in the ever-expanding technology arena.

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Competencies	Related Skills
Builds upon basic digital literacy and vocabulary	<ul style="list-style-type: none"> <li>• For example: Cloud storage</li> </ul>
Displays deeper understanding of computer functions and use	<ul style="list-style-type: none"> <li>• Manages multiple windows</li> <li>• Manages files</li> </ul>
Manages stored information effectively	<ul style="list-style-type: none"> <li>• Recognizes need for backing up information and files</li> <li>• Evaluates systems vs./or in addition to external hard drives</li> </ul>
Creates products and content using digital tools and software	<ul style="list-style-type: none"> <li>• Uses word processing to draft, revise, and edit a piece of text in response to academic assignments</li> </ul>



## Using Digital Literacy Skills to Enhance Science Learning

Integrating technology into instruction does not mean that teachers have to let go of time-tested pre-digital teaching approaches. One teacher, for example, continued to guide his students in the scientific method while enhancing the process by integrating appropriate digital literacy competencies. As a result, the students learned research methods while upgrading their technology skills, which included video capture and editing, working with sound, and project pre-planning and execution (scripts, storyboards, roles, deadlines, tracking, labeling and organizing media).

### The Project

Students (EFL Low and High Intermediate Basic Education Levels) followed traditional steps in the scientific method—an academic skill set that reflects an approach to inquiry. They defined a problem, generated a hypothesis, collected and analyzed data, drew conclusions, and published their results. The experiment, which reflected the integration of several CCRSAE anchor standards, also displayed the teacher’s attention to the instructional shifts in the standards.

The project was designed to test four different brands of batteries to determine which ones lasted the longest. Using clocks as a vehicle for testing the batteries allowed for a built-in method of determining when the batteries wore out. The students also decided to include cost as part of the analysis to determine which battery offered the best value.

### Smartphones and Tablets Help with Documentation

Students were required to keep a journal during the planning and execution of the experiment. They also documented their work by using Smartphone and iPads to take photos and video. As they set up the experiment, students narrated what they were doing as they stripped wires and made electrical connections. Students made predictions about which battery might last the longest and explained the thinking behind their predictions. Students drew from this collected documentation material to create a “making of” presentation about the experiment.

### Displaying Results through Videos

To display the results of the experiment, the teacher guided small groups of students in creating a series of 30-second video commercials. The purpose of the videos was to “sell” the winning battery as determined by the experimental results. This approach replaced the traditional trifold poster board presentation of research results. None of the students had much experience with video beyond the ability to capture short clips on a Smartphone. However, the teacher found that the basics of video creation are easy to master and there are great online resources to help students prepare.

The first task was to prepare simple scripts and storyboards. By exploring websites where they could find royalty-free music, students learned about the difference between copyright and fair use materials.

### Connection to CCRSAE-Anchor and Level-Specific Standards

- **Writing 1:** Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- **Level D:** Write arguments to support claims with clear reasons and relevant evidence.... (W.7.1)
- **Writing 6:** Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
- **Level B:** With guidance and support, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others. (W.3.6)
- **Writing 7:** Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
- **Level B:** Conduct short research projects that build knowledge about a topic. (W.3.7)
- **Speaking and Listening 4:** Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
- **Level D:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation. (SL.8.4)

They also learned the basics of video creation by using Windows Movie Maker or iMovie for Mac, both of which are easy and fun to use.

### Challenges and Solutions

Video formats can be a frustrating mishmash of non-standardization. Many users are familiar with JPEGs, GIFs or PNGs (common image formats) to move images easily between programs. Video is not like that. Creating video on a variety of devices (Smartphone, digital cameras, and tablets) often requires image conversion before editing. This isn't impossible, but it adds a layer of complexity and possible frustration. One solution is to use one device—like an iPad—for all video capture and editing. Staying safely in one environment will make things much easier.

The project unfolded over several weeks and included a full bank of supplemental reading and writing activities. The students appreciated the group work and change up in their regular classroom routines. They responded more positively to some of the activities than others: no one wanted to appear in the video itself, so the class explored ways to create the videos without involving personal appearances.

### Wrapping it up

When the videos were completed, the teacher organized a movie day where the students presented the commercials. Through the creation of the videos, students had also developed a more sophisticated analysis of commercials as a persuasive media product. The teacher is now exploring the use of video in other curriculum units and classes as a vehicle for formative and summative student assessment.

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Competencies	Related Skills
Displays understanding of basic elements of mobile devices and uses Smartphone as a learning/productivity tool	<ul style="list-style-type: none"> <li>• Locates icons correctly</li> <li>• Uses phone for web access</li> <li>• Uses basics of camera function</li> </ul>
Manages stored information effectively	<ul style="list-style-type: none"> <li>• Recognizes need for backing up information and files</li> <li>• Uses flash drives/external hard drives to save and share work</li> <li>• Uploads and downloads files from secure sites</li> </ul>
Creates products and content using digital tools and software	<ul style="list-style-type: none"> <li>• Uses word processing to draft, revise, and edit a piece of text in response to academic assignments</li> <li>• Creates simple video to display research results</li> </ul>



## Digital Flashcards: A Modern Take on an Old Classic

Many low-tech teaching tools can be digitized for purposes of efficiency without losing the original value of the tools themselves. One teacher in an onsite workplace education class wanted to update her use of flash cards; she discovered that having her students use their cell phones to photograph flash cards would facilitate their use.

### Limited Technology Onsite

Classes in this program are held at a major medical center in Massachusetts where the students (EFL Low and High Intermediate ESOL Levels) work. As with a large number of onsite workplace education classes, there is limited access to computers. However, at this site, there is access to the Internet. The teacher had been making good use of her own iPad to show short videos in class and to explain vocabulary words they encountered through class discussion or in instructional texts.

### Updating Flash Cards

The teacher describes herself as a “flash card enthusiast,” noting the value of flash cards as tools to maximize learning outside of class time and, as manipulative that address the needs of tactile learners. She has created many flash-card sets with pictures and words relevant to her students, such as health care terms and sight words. After creating sets of flash cards, she models instruction for various uses of the cards at home—for example, playing a Concentration game, categorizing, or matching. Students take a set of about ten cards home with them per week. Each set is organized with a particular learning objective.

### A Need to Modernize

Students had trouble keeping their flash-card sets together and organized, even though they recognized the value of the cards as a learning tool. To address this problem, the teacher has tried a variety of strategies: keeping the flash cards in envelopes, using key rings to hold laminated cards pre-punched with holes, and organizing them in binders. She has found, however, that students seem to lose or mix up the cards, no matter how the cards are organized. When this happens, the sets of cards lose their learning aims, and students become less interested in using them. The teacher then began to explore the use of online apps to create flash cards that might help students keep them organized. Most of the apps she found were cumbersome and time-consuming and did not allow for the flexibility and customized approach she wanted. Then she happened upon a solution, one that maximized use of students’ Smartphone as an extended learning tool.

### Small Steps

First, the teacher typed up her sets of flash cards for increased clarity, and added visuals as needed. She then showed students, step by step, how to take pictures of the flash cards by phone. All students practiced scrolling and swiping techniques to get to the next card.

Next, the teacher arranged a set of cards in sequence that included a header card identifying the set. This sequencing was an important step toward using the cards effectively; because cards could not be “flipped” like actual hard-copy flash cards, students had to be sure they were in order. For example, one header (the first photo) read: IRREGULAR PAST TENSE VERBS. The next card showed the verb “take,” and the next card

### MA ELPS

**R5.2a** Use information gained from visuals (*e.g., images, maps, cartoons*) to support comprehension.

**R1A.2a** Read and comprehend high-interest environmental print and simple information, such as...very simple one-step written and illustrated directions (*e.g., Turn the page; Copy the word.*)

**L/S3A.4a** Use context and a developing knowledge of English morphology, understand and use common academic (*e.g., conclusion, strategy*) and content-specific (*e.g., inventory, endangered species*) words and phrases.

(essentially the “back” of the flash card) showed the verb “took.” Each student snapped and saved photos of the flash cards. The teacher also guided them in creating folders to organize their card sets.

Once cards were photographed, students could use them to practice on their own time. They could easily delete the cards when they were finished with each set, or reorganize them. Having the cards on their phone decreased the chance the cards would get lost, and they were always easily accessible. Students could practice with the cards on break, on the subway or bus, or during downtime.

### Simple Modernization

Photographing and saving flash cards on the phone resolved the issue of organization. It also seemed to increase students’ use of the cards. This approach did not require Wi-Fi or registration with a learning program. The students had to figure out how to organize picture files on their phones and, when new pictures were taken, how to drop them into a folder. Since students were adept at scrolling through pictures, they were able to access and use the flash cards when needed. While the teacher still made use of hard copies of flash cards in class, the photo technique greatly improved their out-of-class use.

### Adapting the Technique

Not every teacher is a flash card enthusiast. However, after sharing her success with her colleagues, the teacher discovered they were adapting the phone/camera approach for other purposes: One teacher asked her students to take pictures of a classroom-generated language experience story posted on a whiteboard so that they could take it home and copy it. Another had students snap a photo of a writing prompt, essentially using the phone to keep track of homework assignments. Students also can photograph new vocabulary that often emerges in a class and is explained on the board.

### Connection to CCRSAE-Anchor and Level-Specific Standards

- **Reading Foundational 3:** Know and apply grade-level phonics and word analysis skills in decoding words.
- **Level C:** Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context. (RF.4.3 and 5.3 merge)
- **Language 4:** Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
- **Level A:** ...using an array of strategies... (L.1.4)
- **Reading 4:** Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- **Level A:** Ask and answer questions to help determine or clarify the meaning of words and phrases in a text. (RI.1.4)

Competency	Related Skills
Uses multiple digital literacy instructional tools to achieve content areal learning goals.	<ul style="list-style-type: none"> <li>• Uses/ adapts to various devices and technologies (tablets, mobile devices etc.)</li> <li>• Uses apps, software and web sources for teaching</li> </ul>

### Resources

For more information about language experience stories, see [http://www.cal.org/caela/esl\\_resources/digests/LEA.html](http://www.cal.org/caela/esl_resources/digests/LEA.html)

## Risks and Rewards: Learning from Mistakes with Digital Literacy

Even with the best of intentions, experiments in trying new technology tools can sometimes fall flat. But as teachers tell students all the time, taking risks—with new language, technology, or in other areas—can sometimes accelerate learning, as long as we reflect on what went wrong. The vignette that follows illustrates how a teacher rushed too quickly to adopt a new tech tool but learned from her experience about how to be better prepared in future efforts.

### Workplace Education Class

Onsite workplace education classes typically meet for a limited number of hours a week. One workplace education program where students met once a week for three hours decided to implement an online learning system to extend teaching and learning time outside of class. The students (EFL High Beginning ESOL Level) needed to improve their English language and digital literacy skills to maintain or advance in their health care jobs. Their limited class time impeded significant learning progress.

The teacher chose Edmodo because of its great success in a college prep class in their workplace education program. Edmodo ([www.edmodo.com](http://www.edmodo.com)) is an educational learning tool. It offers templates for teachers to create customized websites for their classes and can serve as a useful way for students to increase their learning time. Students can access assignments and resources that the teacher uploads. They can also share written assignments with one another and receive feedback. The teacher assumed that since Edmodo worked in one class, it could be imported into another with good results. She envisioned using Edmodo to help students reinforce vocabulary and lessons introduced in class.

Working with a more digitally experienced colleague, the teacher set up the Edmodo site. Together, they introduced Edmodo to the class in the computer lab by projecting the site onto a screen. Their intention was to allow students to follow along as the teachers explained all the features and to assist students one-on-one.

Students became confused early on. As the teachers attempted to clarify their questions, it became clear that neither the students' digital skills nor their digital comfort level were up to the task of learning Edmodo. The teachers continued to plod through the instructions, but both the students and the teachers became increasingly frustrated. So they offered the students a break and took time themselves to debrief.

### A Back-up Plan

When the students returned from break, the teachers explained that they were going to try something different. They wanted to focus on some digital skills building, but without overloading the students. They logged on to the Northstar Digital Literacy Project ([www.digitalliteracyassessment.org](http://www.digitalliteracyassessment.org)), a site that helps users assess their digital literacy skills and improve them in the process. Students began by practicing using the mouse, a task they could easily handle. This step reduced their anxiety and frustration and provided them with a feeling of success.

### Lessons Learned

The two teachers concluded that despite what they thought was careful planning, they were not adequately prepared to introduce Edmodo to the class, nor did they have a well-thought out plan for how they intended to use it as part of their curriculum. By comparison, in the college prep class the teacher had a clear goal for how Edmodo could facilitate a collaborative writing process; she also had a detailed plan for each orientation session. That clarity was lacking when she attempted to integrate Edmodo into the lower level class. Students became frustrated and questioned the use of the online tool.

The teachers realized that they should have asked a series of questions that would have led to a more defined teaching sequence in introducing Edmodo. In their excitement to implement something new, they neglected to align the use of Edmodo to the overall class agenda.

The students' frustration did not arise from their limited language ability. With a proper plan, broken down into very small steps, students could have adjusted to the learning tool over time. However, the teacher realized that Edmodo was not an essential for the class at that time. She decided she would revisit the integration of something like Edmodo in the future, but only when it seemed that there was a more compelling reason to do so.

To her credit, the teacher was not dissuaded from trying to use technology in the classroom. Rather, she was reminded that each teaching activity—and attendant tools—needs to be congruent with learning goals. For some activities, tech tools enhance learning. For others, less “modern” approaches might serve as the best method. As a result of the experience, the teacher has become more curious about ways to integrate technology in simple ways, especially by using a tool most students have with them at all times—their phones.

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Competencies	Related Skills
Uses multiple digital literacy instructional tools to achieve content areal learning goals.	<ul style="list-style-type: none"> <li>• Uses/ adapts to various devices and technologies (tablets, mobile devices etc.)</li> <li>• Uses apps, software and web sources for teaching</li> </ul>
Keeps up with new developments in technology and evaluates their effectiveness in the classroom	<ul style="list-style-type: none"> <li>• Uses an online learning management system</li> </ul>

## **A Program Administrator Helps Staff Improve Digital Literacy Skills for Data Collection**

Introducing new technology tools into a program can evoke anxiety on the part of many staff members. When program administrators anticipate issues and plan ahead before insisting on a new digital system or tool, they can help staff feel confident about adapting to the changes, and increase the chances that staff will see the value in using new tools.

One program director in a large adult education program recently replaced hard-copy attendance books with an online system, with the goal of increasing the efficiency of data collection. The old paper and pen method of recording attendance was cumbersome and time consuming when entering data into SMARTT. The director wanted a no-cost system that would allow “real-time” electronic attendance tracking by instructional staff, easy manipulation of fields to allow for changing class makeup; the ability to track for SMARTT data entry, and confidentiality of data.

After attending a professional development workshop offered through the System for Adult Basic Education Support (SABES) on 21<sup>st</sup> Century skills, the director settled on LiveBinders, a digital organizational system that stores documents, images, videos, and web pages. As with traditional three-ring binders, information can be organized by tabs and could be adapted to the specific needs of a program.

### **How Does LiveBinders Work?**

Each teacher was assigned a binder of his or her own—set up by the data entry specialist—that included a tab for each class and a sub tab for each month of the year. Each class binder, updated monthly, reflects the current list of students in each class and the days each class will be in session that month.

Instructors were trained to go into LiveBinders and use it to mark a student as present, tardy, absent, or no longer attending. Space at the bottom of the page allows for teacher notes as a way to communicate other details about the student.

LiveBinders allows for restricted access to information. The creator of the binder can invite specific staff people (such as academic advisors) to have access to a particular binder and its contents. Options for access include read-only or permission to change data. This feature addresses a program’s need for confidentiality and selective data sharing.

At the beginning of each class, instructors now pull up their LiveBinders screen on the computer in the classroom. Once class begins, it takes seconds to take attendance. Once the information is saved, it is visible by everyone with permission to access that binder. (Editing is as simple as clicking “edit,” making changes, and saving the changes.)

### **Challenges and Solutions**

Initially, teachers resisted the switch to LiveBinders. However, they adapted very quickly. The program provided a significant amount of support to ensure a smooth transition, and the director also reassured teachers that they could continue using their hard-copy attendance books if they wanted to, but that official data entry needed to be recorded in LiveBinders.

The drawbacks of using LiveBinders are minimal. For example, some instructors found it frustrating to have to go back into LiveBinders to mark students as tardy when they show up late, after they have been marked as absent. These teachers now find it more efficient to take attendance just before the end of class.

Teachers new to technology can accidentally erase the attendance grid. This happened frequently in the beginning stages of adjusting to LiveBinders, but accidents have decreased with additional practice. In addition, the data entry specialist makes copies of each week's attendance as backup for new teachers.

### **Additional Benefits**

LiveBinders has proven useful for real-time communication among instructional, data-entry, advising, and administrative staff regarding attendance and other issues. Notes go back and forth all the time, such as reminders and alerts, opportunities, and changes in a student's status. Unlike email, teachers open LiveBinders at the beginning of every class, so notes can be timely.

LiveBinders also provides year-at-a-glance attendance, replacing bulky attendance-sheet folders and boxes of papers with attendance jotted down on scrap paper. It reduces time putting together year-end stats: these stats "live" in LiveBinders and can be archived from year to year. LiveBinders has also streamlined the data collection and entry process for data entry staff.

### **Nice Surprises**

LiveBinders has been accepted so well by staff that it is now used for purposes beyond attendance taking. These uses include recording electronic advising notes and recording test scores. Instructors now use LiveBinders to maintain and document their weekly meeting minutes. One teacher volunteers to take notes, directly into the binder, each week. This information can then be seen and addressed by the administration and advising staff as well.

### **Lessons Learned**

Staff training and support was a critical element in making LiveBinders work. Administrative staff spent a great deal of time anticipating potential issues and in creating step-by-step job aids. Further, they continued to support staff after the initial pilot and launch stages and intend to make a similar time investment in future programmatic changes that involve technology.

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## **Responding to Teacher Resistance in Using Digital Tools: One Program Director's Story**

Program directors and professional development trainers are sometimes met by teachers' resistance to the adoption and integration of digital literacy into the classroom.

One director in a large ASE/ESOL program decided to step back—several times—and examine this resistance in order to target support for teachers as they, along with their students, become more digitally proficient.

### **Reasons for Resistance**

Teachers often question why they should change when they've been teaching for many years and are having successful outcomes. This sentiment reflects a lack of comfort with technology or how to use technology to support teaching and learning. While many adult educators are digitally adventurous, some may be wary of using online tools.

Prior to WIOA, expectations around technology were less rigorous and did not reflect the deeper skills of finding, evaluating, organizing, and communicating information. It's possible, with the recent and rapid changes in technology, that teachers may not be aware that for students to succeed in college and careers they must be digitally literate. The director soon realized the need to engage teachers in a deeper understanding of how they could move toward embracing digital tools for learning purposes.

Understandably, staff also resisted digital integration because of the confusing array of digital resources and tools available. The director found that providing lengthy lists of possible tools had the opposite effect from what she intended; teachers felt overwhelmed. Staff did not have the time to vet the tools, figure out how they work, or determine how they could be integrated into instruction.

### **Addressing Resistance: What Did Not Work**

Early on, the director tried many approaches to integrate digital literacy into instruction. Most were not successful. First, she left it open and asked teachers to integrate technology into their teaching on their own terms. Teachers took their students to the computer lab and with the help of a device called a document reader used its capability to enhance video or speech to access keyboarding tutorials. However, the teachers did not move much beyond these activities.

Next, the director attempted a more specific approach, asking every teacher to create and use a wiki in his or her classroom. (A wiki is a website that allows collaborative editing of its content and structure by its users. To illustrate possibilities, she, along with the technology coordinator, developed a model program wiki and an advising wiki.) The technology coordinator also set up individual and group lessons on the basics of wiki creation and offered support as staff worked to create an interactive site. They discovered that this task was much too complicated and, in light of other teacher responsibilities, too time-consuming.

### **Next Steps**

Convening a digital literacy working group proved to be a useful next step. Four staff members—teachers who understood the value of digital literacy and who had willingly explored technology tools—came together. They enthusiastically shared tools they had used and explored ways to adapt them for ASE or ESOL.

Because the group realized that not all teachers are not enthusiastic about digital literacy; they began to explore small steps for increasing the digital comfort level and expertise of the rest of the staff. The group started by assessing staff digital needs and interests through a survey created with Survey Monkey. To encourage honest responses, staff could answer anonymously. Based upon on survey results and conversations with staff, the director decided to move forward with a plan to develop the digital literacy skills of students and staff at the same time.

### **New Teacher Workshops**

The new plan involved a more cohesive approach to staff development and the creation of new program policies, using Google as a jumping off point. The director and technology coordinator developed several workshops to introduce staff to the benefits of Google Drive and to help staff open Gmail accounts. This approach provided a shared starting point. During these workshops, they reassured teachers that non-digital, tried-and-true teaching approaches are still essential. However, they included discussions of, and information about, the growing imperative for students to become digitally proficient to succeed in postsecondary education, employment, civic participation, and family life.

### **New Policies**

Two new policies helped move digital literacy integration forward. All the students are now required to have Gmail accounts, and all regular class business (announcements, absences, etc.) is conducted using those accounts. This policy provided a structure for students to become familiar and comfortable with using email.

Further, teachers are required to save all written classroom assignments—originals and revised versions—to Google Drive. This process has resulted in a significant savings per year formerly spent on flash drives for students.

### New Resource List

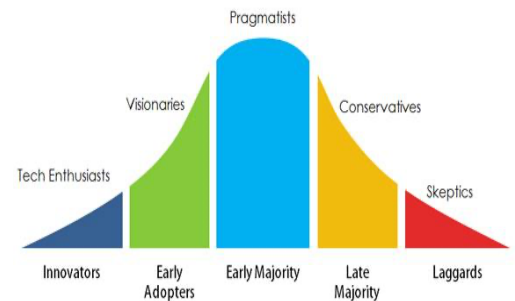
To help teachers select appropriate digital literacy tools, the program reduced and edited their resource list. The work group selected their top ten list of tools and annotated them. To encourage buy-in, the director and technology coordinator asked specific staff members to research and report on these tools. Over the course of the year, ten new tools will be presented to staff by their peers and added to their teaching toolbox.

Finally, a designated portion of each staff meeting has been set aside for addressing digital literacy. Staff revisits the WIOA definition of digital literacy and illustrates how aspects of the definition can be brought to life in the classroom.

### Lessons Learned

Understanding teacher resistance has helped the program director develop a reasonable plan for helping teachers expand their digital literacy skills. By removing the mystery around digital literacy, the program has successfully moved forward and now incorporates more digital literacy into teaching. While not all teachers embraced digital integration, they are hopeful that ongoing teacher support, the use of a more targeted list of digital tools, and the continuation of a digital literacy working group will help encourage curiosity and mitigate resistance.

### Product Adoption Curve



*This graphic illustrates a spectrum of responses to adopting technology.*

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### Resources

“Ten Reasons Your Educators are Resisting Your Change Initiative”

[http://blogs.edweek.org/edweek/LeaderTalk/2011/05/10\\_reasons\\_your\\_educators\\_are.html](http://blogs.edweek.org/edweek/LeaderTalk/2011/05/10_reasons_your_educators_are.html)



## Digital Resources

This selected list of resources is organized by theme. Teachers and program directors are encouraged to expand, personalize, and update the list to increase its relevance to individual program needs.

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### Assessment of Digital Literacy Skills

**Cell phone Survey** - <http://tinyurl.com/yjzqxy6>

The questions in this survey give teachers information about their students' access to cell phones, the types of phones they use, and the ways in which they use them.

**North Star Basic Computer Skills Assessment** - [www.digitalliteracyassessment.org/](http://www.digitalliteracyassessment.org/)

The Northstar Digital Literacy Project defines and assesses basic skills needed to perform tasks on computers and online. After successfully completing various assessments, people can obtain a Northstar Digital Literacy Certificate, which can serve as a credential for employment. There is no cost to complete the assessment modules.

**Student Computer Skills Survey** -

[https://docs.google.com/document/d/1tvx\\_olw5HtkEGswmIuG2k9xKancwpR\\_EHRXiiuz-JB8/edit?usp=sharing](https://docs.google.com/document/d/1tvx_olw5HtkEGswmIuG2k9xKancwpR_EHRXiiuz-JB8/edit?usp=sharing)

This survey asks a series of questions to help teachers assess their students' experience with computer use and access to the Internet.

**Technology Self-Assessment Tool (TSAT)** - <http://www.doe.mass.edu/odl/> (See tool on right side of page under "Featured" resources.) Developed by the Massachusetts Department of Elementary and Secondary Education, this tool serves as a self-assessment instrument to help guide professional development for digital literacy.

### Access to Technology

**EveryoneOn** - [everyoneon.org/adulted](http://everyoneon.org/adulted)

EveryoneOn is a national nonprofit organization whose work focuses on increasing access to free and low-cost Internet service and free digital literacy courses. Through EveryoneOn, adult educators can purchase low-cost Internet access that enables them to use Wi-Fi hotspots for their classrooms.

### Professional Development for Teachers and Administrators

**LINCS** - [lincs.ed.gov/](http://lincs.ed.gov/)

LINCS offers archived webinars, community of practices and online courses for adult education practitioners.

**Digital Promise** - [digitalpromise.org/](http://digitalpromise.org/)

Digital Promise works to improve digital learning opportunities for low-skilled, under-served adults in the United States. Click "Adult Learning" under their drop down menu for 'Our Work.'

**Blended Learning for the Adult Education Classroom**

<http://app.essentialled.com/resources/blended-learning-teachers-guide-web.pdf>

This free, downloadable step-by-step guide is intended to help teachers and administrators in adult education programs explore approaches to integrating blended learning into their classroom methodology.

**Tech Tips for Teachers** - <http://edtech.worlded.org/blog/>

This World Education blog offers a menu of practical lessons, including topics such as: mobile writing, using Google Docs, and using discussion boards in the classroom.

## Common Online Learning Management Systems (LMS)

**Blackboard** - [www.blackboard.com](http://www.blackboard.com)

Blackboard is a learning management system (LMS) that allows for online communication among students and between students and instructor. Blackboard is a common choice for college classes.

**Edmodo** - <https://www.edmodo.com/>

Edmodo is a web-based platform similar to Facebook where teachers can post assignments and students can upload documents to share. Unlike Facebook, Edmodo is a closed environment where the teacher approves and enrolls students.

**Moodle** - [moodle.org/](http://moodle.org/)

Moodle is a learning platform or course management system (CMS)—a free open source software package designed to help educators create effective online learning communities. It is often used for college courses or blended learning.

## Easy Web Templates

**WIX** - [www.wix.com/](http://www.wix.com/)

Wix is a drag and drop website builder. Teachers can choose a template and insert content to build an interactive website with and for students. It is not necessary to know computer code to use Wix.

**WEEBLY** - [www.weebly.com](http://www.weebly.com)

Weebly is another drag and drop website builder that offers a wide variety of pre-designed templates. It also offers hosting services.

## Digital Literacy Standards

**TESOL Technology Standards Framework** - <http://www.tesol.org/>

The TESOL technology standards, based on the National Educational Technology Standards (NETS) Project in the International Society for Technology in Education, focus on how ESOL teachers should use technology effectively as part of instruction.

**Digital Literacy and Computer Science Framework** - <http://www.doe.mass.edu/frameworks/dlcs.docx>.

This document updates and defines what K–12 students should know and be able to do in order to use technology for learning.

**International Society for Technology in Education (ISTE)**

[www.iste.org/standards/iste-standards/standards-for-teachers](http://www.iste.org/standards/iste-standards/standards-for-teachers)

[www.iste.org/standards/iste-standards/standards-for-students](http://www.iste.org/standards/iste-standards/standards-for-students)

## Organizations

**Tech Goes Home (TGH)** - [www.techgoeshome.org](http://www.techgoeshome.org)

TGH Community provides teacher training to help adult educators integrate digital literacy skills into their programs. When participants complete TGH training, they can purchase a new computer for \$50 and receive assistance in obtaining low-cost Internet access.

## Classroom/Program Resources

**Azar Grammar** - [http://www.azargrammar.com/materials/FWG\\_TOC.html](http://www.azargrammar.com/materials/FWG_TOC.html)

This online companion to Azar's grammar texts was developed by teachers and provides a useful source for worksheets and activities on different aspects of grammar.

**Common Sense Education** - <http://www.common sense media.org/educators/digital-citizenship>

Common Sense Education offers free professional development for teachers. It also offers a digital citizenship curriculum with full scope and sequence. Although the focus is on the K-12 system, adult educators can draw from the Grades 9-12 section of the curriculum for adult education classes.

**DIGITAL LITERACY.gov** - <https://digitalliteracy.gov/>

This comprehensive site offers practical tools for educators, such as tutorials on health issues, copyright basics, how to take an on-line course, Internet safety precautions, basic computer skills, and professional presentation on social media.

**Using Cell phones as learning tools** - <http://www.teachhub.com/how-use-cell-phones-learning-tools>

This short article offers some useful pointers on making the most of Smartphones.

**Integrating Digital Literacy into English Language Instruction: Companion Learning Resource**

[http://lincs.ed.gov/sites/default/files/LINCS\\_CLR-2\\_508.pdf](http://lincs.ed.gov/sites/default/files/LINCS_CLR-2_508.pdf)

This resource has examples of strategies, tools, and lesson ideas that support the development of digital literacy skills within the context of English language instruction.

**Interview Questions for Hiring an Educational Technology Leader**

[http://www.cosn.org/sites/default/files/pdf/CoSN\\_Empowered\\_Superintendent\\_CTO\\_Interview\\_Questions\\_FINAL.pdf](http://www.cosn.org/sites/default/files/pdf/CoSN_Empowered_Superintendent_CTO_Interview_Questions_FINAL.pdf)

**Khan Academy** - [www.khanacademy.org](http://www.khanacademy.org)

Khan Academy offers practice exercises, instructional videos, and a personalized learning dashboard that allows learners to study at their own pace. Site includes math, science, U.S. history, world history, and grammar.

**Open Educational Resources (OER): Resource Roundup**

[www.edutopia.org/open-educational-resources-guide](http://www.edutopia.org/open-educational-resources-guide)

An educator's guide to open educational resources for information about online repositories, curriculum-sharing websites, sources for lesson plans and activities, and open alternatives to textbooks.

**Real World MATH** - [www.realworldmath.org/](http://www.realworldmath.org/)

Real World Math is a collection of free math activities for Google Earth designed for students and educators.

**Tune in to Learning** - <http://www.tv411.org/>

This site offers short videos to teach aspects of reading, writing, vocabulary, science, math, and finance.

**Tune in to Learning** - [www.tv411.org/reading/](http://www.tv411.org/reading/) or [www.tv411.org/writing](http://www.tv411.org/writing)

This thoughtful, expansive site offers videos to introduce a variety of reading/writing skills—from understanding information on medicine labels and leases to critically analyzing campaign posters. This site is aligned with CCRSAE in many ways, including videos on restating a poem, “reading” art, and reading for work.

## Glossary

**21<sup>st</sup> Century Skills** – refers to a broad set of knowledge, skills, work habits, and character traits that are believed by educators and employers to be critically important to success in college and career settings.

**Address bar** - An **address bar** (also **location bar** or **URL bar**) is a feature in a web browser that shows the current URL and accepts a typed URL that navigates the user to a chosen website.

**Application** - a computer program that is written and designed for a specific need or purpose.

**Bandwidth**-Bandwidth describes the maximum data transfer rate of a network or Internet connection. It measures how much data can be sent over a specific connection in a given amount of time.

**Digital Footprint** - digital footprint is a trail of data created while using the Internet. It includes the websites visited, emails sent, and information submitted to online services.

**Format** - The term "format" has several meanings, related to 1) disk formatting, 2) page formatting, and 3) file formats.

**Google Drive** - Google Drive is a service offered by Google that allows one to store and share files online. The goal of Google Drive is to provide a central place to store files online so that one can access them from anywhere. The web-based Google Docs application is used to create or edit documents online.

**Hardware** - Computer hardware refers to the physical parts of a computer and related devices. Internal hardware devices include motherboards, hard drives, and RAM. External hardware devices include monitors, keyboards, mice, printers, and scanners.

**Internet Service Provider (ISP)** - An ISP provides access to the Internet. Whether at home or work, each time you connect to the Internet, the connection is routed through an ISP.

**IP Address** - An IP address, or simply an "IP," is a unique address that identifies a device on the Internet or a local network.

**Link** - When you are browsing the Web and you see a highlighted and underlined word or phrase on a page, there is a good chance you are looking at a link. By clicking on a link, you can "jump" to a new Web page or a completely different Web site.

**Menu Bar** - A menu bar is a user interface element that contains selectable commands and options for a specific program.

**Navigation Bar** - A navigation bar is a user interface element within a webpage that contains links to other sections of the website.

**Netiquette** - Netiquette, or net etiquette, refers to etiquette on the Internet. Good netiquette involves respecting others' privacy and not doing anything online that will annoy or frustrate other people.

**Operating System** - An operating system, or "OS," is software that communicates with the hardware and allows other programs to run.

**Platform** - In the computer world, a "platform" typically refers to a computer's operating system.

**Resolution** – Refers to the sharpness and clarity of an image. The term is most often used to describe monitors and printers.

**Server** - A server is a computer that provides data to other computers. It may serve data to systems on a local area network (LAN) or a wide area network (WAN) over the Internet.

**Storyboard** – is a graphic organizer in the form of illustrations or images displayed in sequence for the purpose or visualizing a movie, animation, motion graphic or interactive media sequence.

**Software** - Computer software is a general term that describes computer programs. Related terms such as software programs, applications, scripts, and instruction sets all fall under the category of computer software.

**URL** - Stands for "Uniform Resource Locator." A URL is the address of a specific webpage or file on the Internet.

**Web Browser**-A web browser, or simply "browser," is an application used to access and view websites. Common web browsers include Microsoft Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari.

**Web Page** - A web page (or webpage) is a web document that is suitable for the World Wide Web and the web browser. A web browser displays a web page on a monitor or mobile device.

## Appendix A – Sample Competencies and Related Skills

Competency	Specific skills associated with competency
Displays understanding of basic digital literacy concepts and vocabulary	<ul style="list-style-type: none"> <li>• Hardware, software, devices</li> <li>• Browser, applications, virus, links</li> <li>• Cloud storage</li> </ul>
Displays Understanding of basic computer use	<ul style="list-style-type: none"> <li>• Uses a mouse pad</li> <li>• Demonstrates beginning-level keyboarding skills</li> <li>• Uses basic toolbar and scrolling functions</li> <li>• Opens and closes applications on computer</li> </ul>
Displays understanding of using a variety of technology tools to gain meaning from information	<ul style="list-style-type: none"> <li>• Chooses and uses a variety of electronic searching tools e.g. databases, browsers, online references</li> <li>• Uses appropriate technology for listening, viewing, reading, and organizing activities</li> </ul>
Displays basic understanding of social media	<ul style="list-style-type: none"> <li>• Recognizes consequences of public accounts (Facebook etc.)</li> <li>• Chooses appropriate privacy settings for social media account</li> </ul>
Searches for and locates information and resources online	<ul style="list-style-type: none"> <li>• Chooses a browser</li> <li>• Displays understanding of browser tool bar buttons</li> <li>• Displays understanding of URLs and links</li> <li>• Displays basic navigation skills (selecting tabs, following links)</li> </ul>
Displays deeper understanding of computer functions and use	<ul style="list-style-type: none"> <li>• Manages multiple windows</li> <li>• Manages files</li> </ul>
Manages stored information effectively	<ul style="list-style-type: none"> <li>• Recognizes need for backing up information and files</li> <li>• Evaluates benefits of using cloud-type storage systems vs./or in addition to external hard drives</li> </ul>
Considers safety, privacy, appropriateness and digital footprint before using digital tools	<ul style="list-style-type: none"> <li>• Follows copyright guidelines</li> <li>• Creates strong passwords when creating online accounts</li> </ul>
Creates products and content using digital tools and software	<ul style="list-style-type: none"> <li>• Uses word processing to draft, revise, and edit a piece of text in response to academic assignments</li> <li>• Displays understanding of plagiarism and need for citations</li> <li>• Uses word processing and templates to create a resume and cover letters</li> </ul>